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ASCENDING TO THE PERPETUAL SNOW-LINE BY RAIL: THE OROYA LINE.

PERU

ITS FORMER AND PRESENT CIVILISATION
HISTORY AND EXISTING CONDITIONS
TOPOGRAPHY AND NATURAL RESOURCES
COMMERCE AND GENERAL DEVELOPMENT

BY

C. REGINALD ENOCK, F.R.G.S.

CIVIL AND MINING ENGINEER

AUTHOR OF "THE ANDES AND THE AMAZON"

WITH AN INTRODUCTION BY

MARTIN HUME

WITH A MAP AND SEVENTY-TWO ILLUSTRATIONS

LONDON

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PREFACE

THE object of this work is to set forth the past and present condition of Peru in a manner which may be of value practically, whilst retaining the interest and colour which have always tinged our imaginings of this fascinating land. In a former book,¹ which has been well received, the author dwelt more extensively upon matters of travel and life in the Andes and other zones of the country, and less with the informative side, which this work is intended to cover. Both books are the result of some years of travel and work, and it is hoped that they will supply a fuller knowledge of a developing country about which there is not a great deal of literature.

¹ "The Andes and the Amazon : Life and Travel in Peru."

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INTRODUCTION

FOR ages the name of Peru has stood in the minds of men as a symbol of wealth unbounded. The coast was stark and barren, parched with endless drought, and beaten by tearing surf for hundreds of miles at a stretch between the few havens; and if primitive civilisation had first approached the country from the sea, it would have found little to reward the discoverers without incredible labour. But it was not so. From that memorable day in 1513, when from a "peak in Darien" Vasco Nuñez de Balboa first beheld the western sea, with land unlimited on either hand, it was known to the white men that to the south there lay a great, civilised empire, self-sufficing, and owing nothing to its neighbours—an empire where gold was but a household metal, preferred for its beauty and adaptability, but held in no special esteem as a standard of value. To find and conquer such a land, where wealth could be won at the sword's point, and the heathen people brought into submission to the Church and the Spanish king, was the dream of all those ardent spirits who in crazy caravels put forth from Spanish ports into the wondrous Unknown, to win wealth and honour imperishable. With their lives in their hands, the Conquistadores had traversed wild solitudes, and scaled untrodden mountains even now almost inaccessible. Thousands already had died of disease, battle and starvation, and thousands more were pressing

forward to follow in their footsteps. The conquest of New Spain—Mexico—had brought them face to face with fierce and warlike peoples, hard to subdue, and full of savage warriorcraft which made the booty won by the white men dear in price. To the south of the isthmus, moreover, the giant Andes reared their towering white peaks as if forbidding advance in that direction, and it is not surprising that the Spaniards chose to seek the promised empire of gold by sea, rather than by land. Vasco Nuñez de Balboa, from the new settlement at Panama on the Pacific, had launched a boat with which he hoped to sail along the coast until he came to the coveted land, but Vasco Nuñez, like so many more of the Conquistadores, fell a victim to the vengeance of jealous rivals from Spain before his plans were ripe; and the conquests towards the north occupied for the next six years the attention of those who, under the ruthless Pedrarias Davila, were carrying to the gentle natives of the isthmus the gospel of Christ soaked in blood of the innocent, shed for greed of gold.

How Pizarro and Almagro, with stern, unbending determination, undertook, with a mere handful of adventurers, to conquer and hold an empire more ancient and splendid than that which had fallen to the sword of their old master Hernan Cortes, is told in the pages of this book. It is a story of heroic endeavour sullied by heartless cruelty that has rarely, or never, been equalled in the world. Pizarro and his band of splendid ruffians, fortunately for themselves, found, when they arrived in 1532 at Tumbez, after incredible hardships and disappointments, a land the like of which no one of them had dreamed. Here there were no warlike savages such as they had seen in Mexico, but gentle, submissive people, living in idyllic communion in a completely-organised State; here were no malarious, far-flung forests and pestiferous swamps, like those that in Nicaragua had claimed so heavy a toll of life from the

conquerors, but sweet and fruitful valleys and terraced hillsides, and a climate so balmy and delicious as to make all others inclement by comparison. But most marvellous of all, gold was everywhere. "Even," says the Inca Garcilasso, "the pots and pans and kitchen vessels were of gold and plate." Gold, the magnet that had drawn the dauntless company hither through hardships so terrible, was here within the reach of the poorest trooper, in quantities sufficient to make him a splendid noble in Spain, and, wonder of wonders, the people of the country valued it not.

How the fervour for their gospel, combined with greed of gold, stirred the hearts of the rough conquerors, until they lost all sense of proportion, even of right and wrong, is seen by a few lines written by Cieza de Leon in describing the first entry of the Spaniards into the valley of Tumbez. Pizarro's little force was encamped close to the valley, where a populous city, with a temple and an Inca palace, seemed to forebode opposition to the white men, and none had dared to approach too closely. Then one soldier, Pedro de Candia, was seized with one of those strange fits of fervour which sometimes raised these coarse, materialistic soldiers to the height of inspired prophets. "Determined am I," he said, "to go alone and explore yonder valley. If they slay me, you, my comrades, will have lost little or nothing in me, but if things turn out to my desire, then will our victory be great indeed." Then, arming himself with a coat of mail, a helmet of steel, a buckler and a sword, the giant Pedro de Candia, bearing in his left hand a huge wooden cross as the sign of the faith triumphant, set out alone to face a whole nation. What he saw in his march his friends set down, and we may read to-day. Ferocious wild beasts guarding the entrance to the Inca Temple of the Sun crouched and fawned at the sight of the Christian symbol. Magic gardens, saw he, made by men for the

Inca's pleasure, where trees, plants and flowers, animals, reptiles and the like, were fashioned in solid gold: on all hands the precious metal glittered and shone, unvalued except for its brightness by the simple natives, for whom money was not yet a need.

The story of the shame and wrong that accompanied the Conquest of Peru need not be repeated here, and my only reason for mentioning it is to point out its application to the modern problems of the country. The Inca Empire had needed no foreign trade. The land to the south, now a part of Chile, had been brought under partial subjection, but only to prevent the disturbance of the settled Peruvian communities by savage neighbours. The physical conformation of the country, as is fully explained by Mr Enock, divides it roughly into longitudinal sections; so that before the arrival of the Spaniards, the natural course of movement following, as usual, the line of least resistance, was mainly from north to south between the parallel Andean ranges. The Inca State had little need of the sea, except for fishing; and the necessity for transit from east to west across the ranges was small. From the cradle of the Inca power, that strange inland sea, Lake Titicaca, the roads ran mostly on the high table-lands to other centres of population similarly situated.

The vast quantities of alluvial and placer gold easily won by washing and primitive mining in the high regions and slopes of the Andes, used by the Incas, as we have seen, for household purposes and adornment, needed no outlet by the sea until the Spaniards came. But the problem of Peru ever since the Conquest has been to change the natural course of transit from north to south along the Andean table-lands to the unnatural course across the mountain ranges, in order to bring the wealth of the latter to the coast for export and exchange. The Spaniards were always bad road-makers, and the means

of transit from the seats of natural wealth to the coast of Peru were practically neglected during the whole period of the Spanish domination of the country. The precious metals, it is true, were got down to the coast somehow for shipment, to be squandered in Spain or captured by English and Dutch rovers on the way thither; for the lives of the wretched Indians were cheap enough under the atrocious system of the *mitad*, and, so that gold could be won and brought down, it mattered not how many brown wretches were sacrificed in the process. There were in Peru during most of this period some fourteen hundred mines in work, and any cessation of operations even for a year entailed the confiscation of the mine to the Government. To enable continuous exploitation the Indians within 30 miles of a mine were drawn by lot to work for six months underground. The unfortunate creatures upon whom the fate fell looked upon the obligation as a sentence of death, and, indeed, not more than a fifth of those chosen survived their six months' *corvée*. It has been calculated that during the Spanish colonial period eight millions of Peruvian Indians were thus done to death for the precious metals, and perhaps as many more were sacrificed in the *encomiendas*, or estates, wherein they were held in vassalage and treated too often with heartless cruelty by their lords.

So long as labour could be obtained thus, with little cost to the exploiters, gold and silver were won in great plenty, for the Incas, with their primitive methods, had hardly touched the sources of supply; which, indeed, to a great extent still remain virgin. But with the new era ushered in by the proclamation of Peruvian independence this process of wringing gold from the earth by the lavish sacrifice of Indian lives came to an end. The new governors of the soil turned for the wealth they needed, not so much to the precious mines in the Andean ravines and fastnesses, so difficult of access by

primitive roads to the coast, but to the guano and nitrate, which, thanks to the rainless climate, were lying in huge deposits on or near the surface in the Pacific lowlands.

In the meanwhile wealth incalculable has been lying fallow on the old Inca uplands and crags, awaiting the transverse means of communication to replace the ancient longitudinal highways which served the needs of an earlier age. Here and there foreign enterprise has run already daring railways from the ports into the interior to tap particular mining regions or productive agricultural areas. From the seaports of Pacasmayo, Eten, Salaverry, Chimbote, etc., there are small railways running towards the Cordillera, mainly useful to bring to the ports the produce of the neighbouring valleys; but the great line which taps the riches of the higher levels is that which for the last thirty-eight years has been struggling onward towards the east from Lima, the Oroya railway which has had to face difficulties that seem to the layman almost insurmountable. Mr Enock's description of the configuration of the country will explain how it is that in the first 46 miles of the way, the rise is no less than 5,000 feet. In the 138 miles to Oroya, on the eastern side of the first chain of the Andes, sixty-three tunnels pierce the range, the highest at an elevation of nearly 16,000 feet, the same height as the summit of Mont Blanc. Almost as stupendous, and of even more importance for the future, is the line which starts from Mollendo, and, running through Arequipa, reaches the shores of Lake Titicaca at Puno, whence it skirts the inland sea to La Paz, the capital of Bolivia, and on the other hand extends towards, but does not reach, the ancient Inca capital of Cuzco.

These two lines illustrate at once the principal need and the principal difficulty of Peru's successful development. The distances across Peru are relatively short in

comparison with the longitudinal extent of the country, but the prodigious rise from the coast zone to the Andean valleys, where fertility, and, higher still, where mineral wealth abound, necessarily makes construction costly and difficult. And yet if Peru is to yield its teeming wealth to the world, these roads must be made: for the nitrate deposits have been appropriated by Chile, and the guano has been to a great extent worked out, and if Peru is to prosper, it must be by means of the products of the Andean zones that supplied the Inca State with its resources. Peru has of late years done much—mainly, it is true, by the aid of foreign capital—to meet her great need. The mistakes due to inexperience, to impatience, and to ambition, inevitable to all new governments, have retarded the process of development here as elsewhere. Foreign capital, scared by the political instability, or by the financial corruption of the past, is shy of encountering the risk of fresh adventures. But it is certain that Peru, like its neighbour Chile, has learnt much from past experience, and that the bad days of lawless turbulence and financial unscrupulousness are unlikely to recur.

The country enjoys a climate unsurpassed in the world, and can present scenery and atmospheric beauties, together with fertility, which to dwellers in the Old World appear marvellous. What it needs is more energy, more men of active race and sanguine temperament, who are content to work for the future, rather than for the present. Peru, like all other Spanish countries, suffers from the incurable tendency of the race to shun all effort but that which produces an immediately visible result; and a greater infusion of Anglo-Saxon and Teutonic blood, such as that which is regenerating Argentina and Chile, will secure to Peru equal future advantages. What the adventurous Anglo-Saxon will find in the country is set forth in this volume with eloquence, charm and truth. Mr Enock's knowledge of the interior of Peru, and his

aptitude for investigating and recording the present condition and prospects of the country, are unequalled by any recent English traveller; and the exhaustive information he provides on the mineral and commercial products of the country should render his work as useful to the merchant and the financier, as it undoubtedly will be to the traveller.

The future of Peru, like that of Chile, its neighbour, becomes every year of greater importance to the world at large. The signs of the times point to the probability that the struggle for world power, and for world commerce in the days to come will be the Pacific, and that, just as the Atlantic superseded the Mediterranean, the ocean that unites the extremes of East and West will distance in importance that which divides the Old World from the New. The process of change, inevitable in any case with the rise of Japan, the growth of Australasia, and the opening of China, is being accelerated by the construction of the Panama canal; and when, in the course of a century or less, the great change comes, then the harbours of the west coast of South America must become some of the great emporia of the world. Callao and Valparaiso, like San Francisco on the north, may well be to our grandsons what London and Antwerp are now, great distributing centres for other lands, as well as for their own. Peru is, therefore, well worth studying for its probable future development, as much as for its present interest and importance, and it is hoped that this volume will provide, in easily-accessible form, a mass of information with regard to it that will prove valuable alike to traders, travellers, financiers and students.

MARTIN HUME.

PERU



CHAPTER I

A PRELIMINARY SURVEY

First impressions—Parallel features—The coast zone—Climate and rainfall—Mists—Streams—Humboldt current—Bays and ports—Temperatures—Lima—Foothills—Railways—Horseback journeying—Geology—Deserts—Lodging—Coast plains—Minerals—Valleys—The Andes—Plateaus—Snow-capped ranges—Inhabitants of the uplands—Lake Titicaca—Watershed—Inca civilisation—Mountain passes—Storms—Highest peaks—The forest regions—The Amazon.

THAT portion of South America which is contained in the Republic of Peru is a region of great interest and variety, both as regards man and nature; for its historical associations and topographical conditions are more marked and intense than those of any other state within the vast continent whose lot it was to fall under the conquest and influence of Spain.

The object before us is to traverse this great territory of Peru, and examine its conditions. Let us begin, as is most natural, with a brief study of its topography—nature's theatre and environment for the human element which did, does, and shall inhabit it; for to gain any comprehensive idea of Peru, full regard must be had to its physical configuration.

As we approach the country from the sea and behold the yellow, sandy shore from the steamer's deck whilst the vessel floats easily on the Pacific swell, a flood of

historical recollection surges through memory; and helmeted Spaniards, cassocked priests, and sturdy buccaneers people it, for this is Pizarro's land—the coast of the mysterious Peru of the Conquest. What lies beyond that faint blue range of Cordillera which seems to float above the hazy lines of deserts and foothills? There are gold mines, Indians, and forests; strange old ruined fortresses and temples, wrapped in the mystery of their prehistoric origin. Across the barren, sun-beat plains and rainless deserts, alternating with fertile valleys and irrigated plantations, are the wind-swept steppes where the storms of the Andes perennially beat, the perpetual snow-cap, sentinelled by the ice-crowned peaks. That serrated edge of the maritime Cordillera upon our eastern horizon is the apex of the continental watersheds, and beyond it are the great forests of the Amazonian basin—a tropic ocean of mist and leaves. And there, lying near the coast, surrounded by its cultivated lands, is Lima, the old seat of the viceroys, the capital of this modern republic, where dwell an interesting and developing people.

Peru is a country of exceedingly varied conditions, whether of climate, of vegetation, of natural products, or of races. All these variations are due to one source—the great differences of elevation brought about by the Cordillera of the Andes; and upon this condition let us primarily fix our attention as being the dominant note of the scheme of nature in Peru. A glance at the map will show the remarkable series of parallel topographical—or rather oro-hydrographical—features which exist, due to this agency, as follows:—

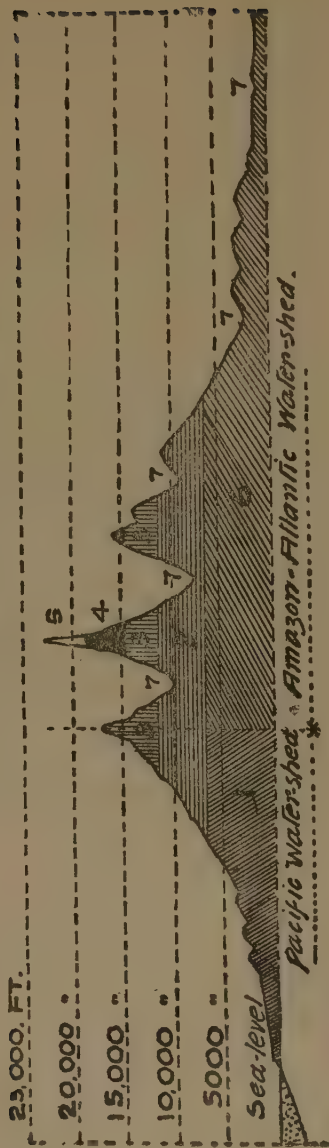
First, a long coast-line—the Pacific Coast—unbroken by any great indentations, and about 1,400 miles in length; extending with a more or less similar character for other thousands of miles down through Chile, Peru's southerly neighbour. Next, a flattish coast zone between the ocean and the Andes, of about 80 miles in width. Then comes the Cordillera of the Andes itself, consisting principally of two—in some places three—main parallel ranges joined by “knots” or transverse sections. Next in the series of

parallel features come the affluents of the Amazon—their birthplace is in the Andean snows—forming the system of navigable rivers which descend to the Atlantic Ocean, across the territory of giant Brazil. Also, in this series of parallel features, mention should not be omitted of the great Humboldt current, flowing north-westerly up the Pacific Coast, and to whose presence is largely due the equable temperature of the littoral. The general trend of this parallelism, as far as Peru is concerned, is north-north-west, where on the borders of Ecuador, Peru's northerly neighbour, the coast-line is broken by the Gulf of Guayaquil, and the Andes become more ramified, so changing also the direction of the Amazonian rivers upon the eastern side of the great ranges of mountains.

We see, therefore, that Peru is naturally divided into three great zones—the coast zone, the Andine zone, and the eastern zone, or region of the forests. For purposes of more exact description, however, it is better to divide the whole territory into five regions, viz. : the coast region, the foothills and western slope of the Andes, the great tablelands and summits, the eastern slopes and valleys, and the region of the true forests. All these five regions offer entirely different conditions of climate and natural products, which in their turn give rise to the differences in the peoples who dwell therein respectively, as will be shown in the chapters upon the anthropo-geography of the country.

The coast zone, a tract of territory some 1,400 miles long and generally less than 100 broad, is a region subject to peculiar climatic conditions, in that rain never, or very rarely, falls there. This is due principally to the influence of the Andes, which intercept the moisture-laden winds which sweep across the South American continent; the moisture being deposited in the form of snow and ice upon the summits. Also, partly by the cool Humboldt current, which being lower in temperature than the ocean and the air, prevents the evaporation of the former. To this latter agency also is due the heavy mists which lie at times over this region, and which, depositing a small amount of moisture upon the foothills, give rise to a certain fertility,

TYPICAL CROSS-SECTION OF THE PERUVIAN ANDES SHOWING ALTITUDES AND CLIMATIC ZONES



EXPLANATION:

1. Coast Zone : warm, rainless climate.
2. Uplands or Sierra : temperate (rainy) climate.
3. " " cold, rainy climate.
4. Region of Perpetual Snow.
5. Highest Peaks : ice-covered.
6. Forest or *Montaña* Region : hot, rainy climate.
7. River-basins.

NOTE.—The vertical scale is exaggerated.

and permit the growth of scanty pasture where otherwise the land would be barren. The coast zone is, therefore, a rainless region, and, consequently, sterile by nature. This circumstance, however, is partly remedied by the streams which, having their birth in the thawing ice-cap, snow-fields, and heavy rain-storms of the Andes, descend therefrom, and crossing the coast zone, discharge into the Pacific. So that nature has not left this region waterless, and these numerous streams permit the irrigation of the coast lands, affording the means of agriculture to their inhabitants. The conditions as regards agriculture will be dwelt upon in a subsequent chapter.

As regards the coast-line, the shore of the Pacific in Peruvian territory is not broken by great or numerous indentations. The greater part of the small shipping ports are open roadsteads, where the heavy surf at times makes landing difficult; but, on the other hand, there are some fine bays and splendid harbours, such as Payta, in the north, Chimbote, more towards the centre, and the historic and well-known harbour of Callao.

The coast zone enjoys a peculiar and excellent climate—peculiar in that the temperature varies but little throughout the year. The mean temperature, for example, at Lima, the capital, is 66° F., the maximum 78°. The sun is rarely hidden, yet its heat is tempered by the cool southerly breezes. The climate throughout the year is suitable for Europeans, and it is within this zone that the white race has mainly taken root, due principally to the proximity of the ocean, as a highway. And yet the population of this great strip is only some 700,000 inhabitants. The Pacific Coast zone is absolutely different in every respect from the coast region in the same latitude on the eastern side of the continent, which forms the littoral of Brazil. It is a far healthier zone.

Let us leave this equable, but non-exhilarating region, and journey eastwardly towards the interior. Before us rise line after line of varied foothills, beyond the plains and deserts we must traverse—hills, lesser ranges, spurs, and canyons, which are piled up on the rising landscape

to where, far away, a high, faint, grey, serrated mass and edge, extending like a wall from north to south, appears. It is the Andes.

If the artist desires to depict this vast range as seen from the coast, he must take his brush and float upon his paper a blue-grey shade of equal tint. There must be no lights and shadows upon it, for at so great a distance mountains show no touch of form or shade—the fact is a measure of their distance as, indeed, Ruskin somewhere so observes. The main summits of the Cordillera of the Andes are from 100 to 200 miles from the coast, and occasionally—but rarely in Peruvian waters—the point of a snow-capped peak is seen.

Let us journey thither in the saddle. We could ascend by train, did we so desire, for two railways reach the plateaus. One of these is the famous Oroya railway which, leaving the port of Callao and passing through Lima, some 9 miles away, ascends the valley of the river Rimac, and thence zigzags up interminable slopes to an altitude of 15,640 feet above sea-level, and this in a trajectory of only 105 miles. The other line—the southern railway of Peru—begins at the port of Mollendo and traverses the coast and the deserts, rising to Arequipa, 7,856 feet altitude. Thence, with sharp curves and steep gradients, it ascends to the plateau of Lake Titicaca, and crosses one of the ranges of the Andes at 14,660 feet.

But unless his business lie in the regions those great lines traverse, the traveller must endure the fatigue of the saddle—fatigue which to many ever carries compensation in that the mode of advance gives opportunity for observation and study. The scanty flora can be examined; the Indian villages and the *haciendas* of large landowners—whose customs and style of living transport us to the Middle Ages—will be our halting-places at night or noonday, and there is much of interest even here for the observant traveller. And last, but certainly not least important, are the geological formations and topographical configurations which are laid bare to the eye; for the absence of rank vegetation in this region causes the rock



A SMALL SEAPORT : CERRO AZUL,

outcrops and stratifications to reveal themselves plainly to the observer—the granites, porphyries, quartzites, slates, limestones, conglomerates and tufas, or other of the numerous rock constituents which the particular region we are traversing may disclose.

Probably we have left the coast port and town by means of a winding mule-trail which follows the stony course of some river-bed. If it is the dry season, there will be still a strong central stream of clear cold water, which we shall continually ford, with the water up to our saddle-bags. If the rainy season, then we shall probably follow a more difficult trail on the edge of the plain, through which the river has cut its way. These variations of flow are due to the wet or dry seasons respectively, in the Cordillera still far away, where these rivers have their source, and from which they flow to the Pacific Ocean.

All day long we have toiled on thus. The sun has beat upon us, the sand and dust have filled our eyes, and the desert wind has scorched our faces, and we are fatigued and bored with the monotony of the landscape and the motion of our indifferent horse or mule. Fortunately, we have our own comfortable saddle, purchased in Lima, without which, and his camp-bed, no traveller will venture forth into the Peruvian interior. The far-distant wall of the Andes takes on a darker, bluer tint, the sun approaches the horizon, the *arriero*¹ whistles to his beasts—the pack-mules with your baggage—and you spur your own lagging steed to a smarter pace. “Where is the *pueblo*?” you ask the *arriero*, as mile after mile you traverse, and no village or habitation appears. “There it is, Señor!” he replies, pointing to a dim spot amid some broken ground away forward, near the banks of the stream which is the author of being of some pasture-lands or sugar-cane plantations which gradually unfold as you approach. And before long you have passed the courtyard, and stopped before the door of one of the large *haciendas*, whose proprietor greets

¹ Mule-driver

you hospitably; or failing that it may be a small *fonda*, or inn, or even the house of the *cura*,¹ or of the *gobernador*,² whither your letters of introduction or the knowledge of your *arriero* have conducted you. This latter individual and your servant rapidly unload and off-saddle, the while you thankfully stretch your legs, and, conversing with the inmates of the place, accept the *copa* of brandy which they hospitably press upon you. The whole scene, if it be new to you, will have that distinctive flavour ever found in Spanish-America, where the characters and scenes of the land and time of Don Quijote de la Mancha seem to have taken up ineradicable habitation!

At the end of our second day's ride from the coast, we shall find ourselves among the foothills and valleys of the western slope of the Andes.

This is a region excessively broken up, and consisting of hills, ridges, counter-ridges, and spurs from the main chain, traversed and divided by deep valleys and precipitous-sided ravines. The sand- and earth-covered *sabanas* of the coast plains give place now to the visible agencies—the plutonic rocks, and those influenced and changed thereby—which constitute the Cordillera of the Andes. Our way will lie among great hills of granite, capped in some places by old lava sheets (towards the south of Peru), which give place, as we continue onwards and upwards, to vast areas of metamorphic rocks, as the quartzites, slates, etc., these again being crowned by great horizons of tilted limestone strata, fossil-bearing, as also of sandstones and conglomerates. Great wealth of minerals, from gold and quicksilver to copper and coal, are contained in these formations, and are described in a subsequent chapter devoted thereto, for Peru is a country more richly dowered with mineral wealth than perhaps any other country in the world. These resources, only partly worked at present, will in the future form the basis of busy industries. At present they are difficult

¹ Village priest.

² Village governor.

of access, but, indeed, it is not to be expected that nature would have planted them in situations where they could have been enjoyed without exertion.

This cisandine region of the western sierra may be considered as being limited by the elevation of 10,000 to 11,500 feet above sea-level, at which altitude the region of the *punas* or plateaus approximately begins. Up to this altitude we shall have observed that maize flourishes, as well as the alfalfa (lucerne) and other fodder, although, naturally, the sugar-cane, cotton, rice, and other semi-tropical products have been left at lower elevations.

This belt or region, broken up topographically as it is, is, nevertheless, in many respects one of the best portions of Peruvian territory; as indeed, also, is that belt at similar elevations upon the eastern slopes of the Andes. It is fairly well watered, and the climate is healthy and invigorating. Some of these valleys are, indeed, subject to a delightful climate, to which it would be difficult to find anything superior. Of course, in some of the low valleys light malarial fevers, or *tercianas*, are encountered at certain seasons of the year, especially where stagnant water, due either to natural causes or to artificial irrigation of the soil, exists.

We now enter upon the true sierra, or high table-lands, known as the *punas*, whose elevation above sea-level is generally from 11,500 to 13,500 feet or more. This extensive and grand yet desolate and inhospitable region contains some of the highest inhabited places on the globe. Topographically, it consists of great treeless wastes, where, indeed, the only vegetation is the mountain grass—the *ichu* of the Indian inhabitants. Vast swamps and lakes, alternating with endless limestone or quartzite areas, greet the view, and innumerable herds of sheep and *alpaccas*, *llamas*, and *vicuñas*, are encountered. The inhabitants are mostly Indian shepherds, the true children of the soil. These hardy natives do not feel the vertigo caused by the thin mountain air—the *soroche*¹—which attacks the traveller who has ascended from the coast,

¹ Mountain-sickness.

before his heart and brain have accustomed themselves to the lessened atmospheric pressure, and his lungs to the diminished oxygen of these inclement plateaus.

But there is a strange exhilaration of the senses here when the first oppression has worn off. As you ascend, and the eastern horizon unfolds, the great ranges of the snow-clad peaks of the white Cordillera greet your vision. Range after range, and peak after peak of purest "porcelain" point towards the blue of that mountain sky. And as the sun sinks below the landscape behind us, a glow of carmine is flung upon these culminating points of matter, painting them in glorious tints, whilst from the canyons below the Andean mists appear, bathed in the purple shades of coming night. The carmine points stand out clearly and beautifully against the orange sky. Behold them!—and when you have turned your eyes away and looked again the tint has gone, and the melancholy grey of those vast steppes and the night fast dominates the scene.

As stated, the Andes consists primarily of two—in places three—roughly parallel chains, joined by transverse sections, and between these, alternating with the high *punas*, are deep and wide valleys, the basins of rivers, the affluents of the great river Amazon. This is the inter-Andine region, which we must descend into and pass in order to reach the great snowy or eastern Cordillera. Within this region there are sparsely scattered villages and towns, whose inhabitants live by mining, cattle-breeding, and agriculture, and whose only means of travel to the outside world are the steep and ill-formed pack-mule roads, which wind interminably over valley, spur, tableland, and river-bed, cross bleak passes, and at times traverse the perpetual ice-cap of the snowy ranges.

Typical of the great *punas*, although still at a moderate altitude—12,370 feet—is the great lake-basin of Titicaca, which with the Desaguadero river and Lake Poopo or Aullagas, forms a hydrographic entity, there being no outlet of this system, and the only means of exhaustion of its waters being by evaporation. Standing elsewhere on



PEAKS IN THE WHITE CORDILLERA : THE HUASCARAN.

To face p. 10.

these tablelands and summits we are on the actual water-parting of the continent. Let us turn our faces to the north a moment. The streams and rills which flow away towards our left hand form the rivers which descend the western slopes and traverse that region we have passed, crossing the coast plains, and emptying into the Pacific Ocean. But those which fall away towards our right have another and more distant destination, for they are the beginnings of the Marañon and Amazon; the source of those great waterways which, uniting into one common stream, empty their vast volume into the Atlantic upon the coast of Brazil, 3,000 miles away.

We are in a region of tempests on these summits. Pelting rains, driving snow, and bitter blasts, are some of the functions of nature on these inclement steppes—rains and snow, however, which do their work in the filling of the stream-beds at lower altitudes. And yet, strange as it may seem, these bleak highlands produced a high American civilisation. It was here—on the *punas* of Titicaca—that the Incas arose and flourished. Here they built their temples, palaces, and habitations, and hence they spread northward, eastward, and westward, carrying their civilisation with them, until the hand of the Spaniards laid it low. But we will leave this interesting history for a later chapter. And this is the home of the *llama*, the curious beast of burden of the Indians, the camel of America, found nowhere else in the world. Indeed, there is much that is unique about these lofty regions, so little recollected by the outside world.

The traveller who enters the interior of Peru from the Pacific Coast must invariably cross the Andes at an altitude of 14,000 feet or more, for the passes of the main Cordillera all reach this elevation. There is one exception, in the northerly part of the country, towards the frontier of Ecuador, where a low gap exists in the Andes, of some 6,700 feet elevation; but this is the only exception in thousands of miles of continuous mountain chain. To reach the passes of the Andes you ride up, up, up, throughout an entire day, your mule or horse fatigued,

and stricken with the *soroche*—the effect of the rarefied air—and yourself weary, dizzy, and perhaps wet, cold, and hungry. You zigzag up narrow paths banked up on treacherous hill-slopes, or blasted and dug out of the almost vertical faces of sheer rocky walls. Probably you are lashed and pursued by the rain and hail, or blinded by the whirling snow. And yet there is an element of pleasure in the pain: you are crossing one of the greatest mountain ranges on the globe; you are upon the veritable roof of the world, and those “porcelain” pinnacles of eternal snow on either hand which tower up above you, are the last, the ultimate crystallised points of matter, stretching heavenward. And possibly you have been fortunate—the elements have not poured out their wrath upon you, and the sun gleams upon the white terraces of those snow-clad escarpments, casting violet shadows upon their pure façades, from the snow cornices which overhang them; whilst great masses of cumulous clouds float away towards the Pacific Ocean, far below, or drift away eastwardly above the illimitable regions of the Amazonian forests.

Within the Andes are some of the highest mountain peaks upon the globe. Sorata, in Bolivia, reaches, more or less, 23,600 feet; Aconcagua, in Chile, is 23,080 feet; Coropuna, towards the southern part of Peru, is given as 22,900 feet; and the Huascarán¹ is calculated by triangulation as 22,180 feet. This latter is in the Department of Ancachs, Peru, and the summit has never been reached, as indeed is the case with others of the crowning peaks of the Peruvian Andes. These snowy ranges are exceedingly beautiful, and their recollection does not soon fade from the mind of the traveller who has beheld them, or essayed their ascent.

Let us now leave this region of eternal snows. Every step we take downwards—for we are now descending the eastern slope of the Andes—brings us to a softer, milder atmosphere and climate. We are leaving the region of

¹ Partially ascended by the author, and described before the Royal Geographical Society.



IN THE PERUVIAN MONTAÑA: PAUCARTAMBO VALLEY.

the *llama* and the *vicuña*, of the condor, and of the hardy *Cholo* Indians of the uplands, and soon we shall plunge into the leafy depths of the mysterious *montaña*, the dominion of the almost impenetrable forests.

The line of vegetation upon the eastern slopes of the Andes begins at an elevation of about 10,000 or 11,000 feet. Above this nothing is found but the prairie grass—the *pajonales*, as they are termed—whilst downwards begin thickets of innumerable kinds of trees and flowering shrubs, shrouded often in mists and rains. The temperature rapidly becomes milder, and indeed is agreeable to the traveller, after the bleak plateaus he has crossed. Rapid streams and deep canyons are passed, and the trail has at times to be cleared of matted brushwood before passage can be effected. Day after day we continue onwards, now through thick forests, now fording the streams, and encamping at evening in some primitive hut, which sometimes we have been obliged to construct ourselves, to keep the rain off during the night. And at length we emerge upon the waters of a navigable river, the Marañon, the Huallaga, the Ucayali, or other. Here, do we desire, we may embark in raft or canoe, and, abandoning ourselves to the current, finish our journey at some Amazonian river port. Here the troubled rivers form one tranquil stream—their birth-place—the snows and storms of the Andes, remaining only as a memory.

Such are, briefly, the natural conditions encountered in traversing the territory of Peru. We must not, however, carry away the impression that Peru is a country of purely savage scenery and primitive dwellings. We have not yet sojourned in her cities—the picturesque homes of a developing nation; but the human element now claims our attention.

CHAPTER II

HISTORY—THE PREHISTORIC AND INCA PERIOD

UNKNOWN TIMES TO A.D. 1513

Origin of the Incas—Discovery of the Pacific—Pizarro—First knowledge of the Incas—Garcilasso—Inca archives; the *quipos*—Children of the Sun—Manco-Capac—The Inca emperors—Lake Titicaca—Land laws—Social laws—Foreign policy—Surrounding tribes—Inca conquests—Art and industries—Roads—Buildings—Monoliths—Tools—Masonry—Gold and silver—Religion—Socialism—Fall.

THE history of Peru, as before remarked, is perhaps more full of interest than that of any other of the American countries. It was here that a remarkable civilisation became evolved, isolated from, and independent of the rest of the world; of unknown origin, and superior to that which had developed in other parts of the Americas. This was the civilisation and *régime* of the Incas—that strange people who inhabited the Andine regions in pre-hispanic days, and perhaps of races inhabiting the country before their time.

Whence this civilisation came, or whether it was autochthonous, is a problem which has been much debated. Varying students and writers have assigned as its origin, respectively, Egypt, Syria, China, Mesopotamia, Japan, Carthage, Canaan, Judea, Norway, etc.; and all these views are based upon more or less substantial argument, which, however, naturally disprove each other, although the most general theory points to an Asiatic source.

The supposed union in former geological times of Asia and America, across what now are the Behring Straits, is pointed to as one argument in favour of the Asiatic origin, or indeed the possible navigation in skiffs from island to island across that zone, of such prehistoric immigrants. In addition, there exist various characteristics of physiognomy, art, custom, and language among the Peruvian



PREHISTORIC PERUVIAN STRUCTURES : THE TEMPLE OF VIRACocha.

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Indians which appear to be similar to those of the Mongolians—characteristics which are also observable among the Mexicans. Among these are facial peculiarities, patterns on pottery and woven textures, agricultural customs and religious ceremonies.

As to the Egyptian theory, many points of supposed origin are adduced, among them being the working and transport of monoliths, the tendency to the pyramidal form in building, the embalming of the dead, the rafts of the natives on Lake Titicaca, formed of woven reeds, and similar in appearance to such a craft figured on the tomb of Ramesis III. Into these matters, however, it is beyond the province of this work to enter, and the student may be referred to the literature of the subject regarding the Incas and their civilisation, which is easily accessible, whether in English or Spanish.

As to the pre-Inca races, there exists no historical knowledge about them. For any study of the subject recourse must be had to the ruins of buildings and tombs scattered over the country. It would appear that a civilisation anterior to the Incas did exist, and that during its period some of the wonderful edifices, whose ruins remain to this day, were constructed. Among these are the stupendous structures—megalithic and otherwise—of Tiahuanaco, at the southern side of Lake Titicaca, which rival in massiveness the monuments of Egypt. These were probably built by the Aymaras, at the time of their greatest civilisation, but were not finished, due to the overthrow of these people by the Incas, whose civilisation and religion were posterior to, as well as adopted from, that of the Aymaras.

Previous, again, to that period, the coast must have been inhabited by races probably of uncivilised nature, evidence of whose existence is furnished by kitchen-middens and pottery, in lower layers of the soil; and these races are supposed to have been of Asiatic origin. Probably knowledge of all these matters will increase as time goes on, and as more expert attention is given thereto. The theory of prehistoric immigration is combated by the autochthonous hypothesis, which assigns an indigenous

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origin to all the red race and original Americans throughout the two continents, without link with, or influence from, the outside.

Be it as it may, the origin of the Incas and their civilisation is wrapped in mystery and fable—a strange secret which the Andine breezes might whisper, or the waves of the Pacific, did we hear them. The beginning of our earliest knowledge of these matters is, of course, after the discovery of the west coast of South America. Balboa crossed the isthmus of Panama in 1513, and first set European eyes on the vast western ocean, and he and his followers gave the name of Peru to the coast stretching southward; Magallanes passed the straits which bear his name at the extremity of South America a few years afterwards, in 1521, and navigated the ocean, which he termed the Pacific; and Pizarro, leaving Panama on 14th November 1524, landed after various expeditions at Tumbez, on the coast of Peru, in 1531. He and his companions suffered many vicissitudes upon the coast, and after further expeditions had been organised, and various conquests of the Indians inhabiting the littoral had been undertaken, knowledge was gained of the existence of the Inca empire and its then chief, Atahualpa, and of the rich and populous cities of Cuzco, Cajamarca, and others, beyond the great maritime Cordillera of the Andes, whose faint grey serrated edge and mass bounded the invaders' horizon to the east. And Pizarro and his followers, fired with the spirit of conquest, set out on 24th September 1532 to reduce that mysterious and unknown country to the service of His Majesty of Spain. How they marched across the coast deserts and traversed the slopes and uplands of the Andes forms a fascinating chapter in the enthralling conquest of Peru; and how they valorously invaded and took possession of that empire excites still our eager interest, as does the murder of its chief and the stamping out of its civilisation arouse our indignation and censure.

After the Conquest, reports upon the history of the Incas were made and sent to Spain, whilst one of the principal historians of these times and dynasties was the

son of an Inca mother and a Spanish father, the famous Inca Garcilasso de la Vega. But, it may be asked, what archives of their past did the Incas possess and retain? They had no system of writing or hieroglyphic representation; no tablets or inscriptions preserved their annals in stone as with other nations of antiquity. Their archives were the curious *quipos*, the bundles of knotted cords of different sizes and colours which formed the remarkable mnemonic system of historical record which they maintained. Every cord and knot and colour had its meaning; they were pages of a book which were easily read by the historians who were trained and appointed to their special custody; and by this method the history of the people was recorded and handed down from generation to generation.

As stated, the beginnings of this history are wrapped in mystery and fable. The commencement of the fable is that the first Inca was a child of the Sun. The orb of day, looking down from on high, observed that the vast region of the Andes was inhabited only by savage tribes, who lived more like animals than men, without social order or decency, and he sent down from heaven to earth a son and a daughter to instruct these people. He charged them to teach these savages to plant maize, build houses, breed flocks, and to come out of their caves and establish cities.

The two children of the Sun were placed on an island in Lake Titicaca. They were given a sceptre of gold, and at whatever point this should sink into the earth a city was to be established. The son was called "Inca," and the daughter was both his sister and his wife. The line of the Incas, ever afterwards, was perpetuated by the marriage of the Inca with his own sister.

The prince and princess journeyed northwards, setting forth their heavenly origin and mission, and advanced to the valley of Cuzco, where the imperial city of that name was founded, for the sceptre of gold—so runs the fable—buried itself in the ground at that point and disappeared from view. The people worshipped the strangers as children of the Sun, and obeyed them as sovereigns, following them in great numbers. This is the origin related by

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the historian, the Inca Garcilasso de la Vega. Garcilasso was born in 1540, the son of a Spanish captain of the same name who fought with Pizarro, and an Inca princess.

A somewhat different account states that a wise woman — Mama Huaco — bethought herself of making civilised beings out of the savages inhabiting those regions, as before described, and being pregnant, she gave forth that she had conceived by the sun. She gave birth to a beautiful son and hid him in a cave in the island of Tiahuanuco, in Lake Titicaca, the same locality as before. As soon as this child was a few years old, she, in company with her daughter, worshipped him as the king and lord of those regions; and the Indians, hearing of his birth and origin, acclaimed him as the Inca and their ruler. The child was called Manco-Capac, or Almighty Child, and he grew up marvellously wise and prudent.

Whatever may have been the real basis of these fables, both of which point to a miraculous origin—and one to a virgin birth—of a redeemer for mankind of those regions, it seems to be a fact that the existence of the first Inca was historically established, and that his consort was his own sister. He was called Manco-Capac the latter word meaning rich, or powerful.

There were thirteen Inca emperors, the descendants of Manco-Capac, as follows:—

- | | |
|------|----------------------------------|
| Inca | I. Manco-Capac |
| „ | II. Sinchi Roca |
| „ | III. Lloque Yupanqui |
| „ | IV. Mayta-Capac |
| „ | V. Capac Yupanqui |
| „ | VI. Ynca Rocca |
| „ | VII. Yahuar-huaccac |
| „ | VIII. Huiracocha |
| „ | IX. Pachacutec |
| „ | X. Ynca Yupanqui |
| „ | XI. Tupac Yupanqui |
| „ | XII. Huayna-Capac |
| „ | XIII. {Huascar (legitimate heir) |
| | {Atahualpa (illegitimate). |

The total duration of the Inca dynasty has been variously estimated from four hundred to six hundred years. Manco-Capac, the first of the line, must have flourished at the end of the eleventh or the beginning of the twelfth century of the Christian era; not a very remote period in the history of civilisation. At the time of the two disputants to succession, when the empire was divided against itself by the factions of Atahualpa and Huascar, the Spaniards appeared—a conjunction of circumstances which brought about the fall and disappearance of the Inca *régime*.

What were the laws, the acts, the mode of life of these people? They are well set forth in the writings of Garcilasso and others, and in general were philosophical and beneficent. What was the scene of the beginnings and development of the Incas, and what was it like in its character and configuration? It was the plateau and lake-basin of Titicaca, that remarkable inland sea, the most remarkable in the world in some respects. This lake is 12,370 feet above sea-level, and 165 miles in length, with an average of 63 broad. With Lake Poopo in Bolivia, and the Desaguadero river and some smaller lakes, as Arapa and others, it forms a hydrographic entity between the two main ranges of the Cordillera of the Andes; and its waters have no outlet, either to the Atlantic or the Pacific Oceans.

Bleak and timberless uplands, swamps, rugged mountain ranges and interminable grass-clad *punas*, surround this cradle of South American civilisation—a place not conducive to any measure of comfort and enjoyment as regards climate or vegetation. Perhaps its very inclement and rigorous conditions made it the materialising point for the birth of order and idea. Certain it is that nothing could show a greater contrast to the luxurious conditions of tropical regions, such as have brought forth the black and other inferior races of mankind, including the savages of the Amazonian forests. In his journeyings on this great plateau, the mystery and romance of the Inca origin and its strange and unique *habitat* appeals strongly to the traveller.

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✓ Let us briefly consider the laws and customs of these people. As has been shown, the first Inca, Manco-Capac, soon left the island in Lake Titicaca and founded the city of Cuzco, some few days' journey to the north-west. The whole of his life was busily occupied in the making and administration of good land and social laws, the extension of agriculture and cultivation, and the overcoming and civilising of the more or less barbarous Indian tribes and communities which inhabited the slopes and uplands of the Andes all around the budding empire.

The first thing was the extending of arable land, and to accomplish this, in the hilly and broken country, the *andenes* were made. These, which ever excite the notice of the traveller in Peru, are terraces upon the steep hill-sides, the soil being kept in place by retaining walls on the lower side, and excavated on the upper. Thus the whole mountain slope was covered, like a flight of stairs, every available space being so utilised. The Inca engineers formed irrigation channels for the watering of the lands in the barren or rainless zones, some of which channels were conducted from the rivers for distances of 15 or 20 leagues; and in this matter of irrigation the Incas were expert.

The area of cultivable land having been increased to its utmost extent, it was measured, each province and village by itself. It was then divided into three parts: the first part was for the Sun, the second for the Inca, and the third for the people. Each Indian was given a certain measure of land, which was sufficient for his sustenance, and as soon as he had a family, a further measure was given for each member. The land was fertilised when necessary with *guano* and other manures, and the available water supply for irrigation was carefully assigned by special officers appointed in each village. No one received any preference, and idle persons who neglected to irrigate their land within the allotted time were punished.

There was no such thing as poverty or destitution, for the infirm or incapable were cared for by their

neighbours according to the law, a regular order in tilling the soil being observed. First, the lands assigned to the Sun were cultivated ; second, those of the widows, orphans, sick, or aged, or persons otherwise unable to work, as also the lands of absent soldiers. After the lands of the poor and distressed had been attended to—and only then—the people worked their own lots, neighbours assisting each other. It is related that an Indian superintendent, in the reign of Huayna-Capac, was hanged because he caused the land of a relative of his—a chieftain—to be tilled before that of a widow ! Last of all, the lands of the Inca were cultivated, the Incas ordering that the welfare of their subjects should take precedence of services to be rendered to them. The cultivation of the lands of the Sun and the Inca were carried out by the people with rejoicing, and amid festivities—a labour of love and duty.

The tribute or taxes paid to the Government—the Inca—was rendered in the cultivation of the lands, as aforesaid, and the gathering-in of the crops. Great granaries were constructed, and grain stored therein, according to the requirements of each village. Or otherwise, tribute was payable in woven cloth, arms, shoes, and other articles, for the Incas considered it unjust to expect payment in articles which could not be produced in any given locality. The crops and supplies belonging to the Sun and the Inca were kept in separate storehouses, and formed provision for the army and other State requirements, and for distribution among the people in time of scarcity or need.

No begging was allowed, as every subject was considered to be provided for. Every man knew how to weave and make clothes, as well as the women, and all ordinary wants each could supply for himself, and was so independent of others. Only special crafts, as painters, boatmen, metal-workers, accountants, historians, etc., had their particular craftsmen. There was no currency, and gold and silver were only esteemed for purposes of the decoration of temples, etc. ; and no one worked to obtain

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these—to them—comparatively useless metals, except in their spare time, and for the above object.

The laws established comprised: a municipal law, bearing on the administration of the different tribes and villages; an agrarian law, dealing with measurement and proper division of land; a common law, which obliged the people, except the children, the aged, and the infirm, to work on the land of the State, and in the making of public works, as temples, palaces, bridges, roads, etc., all arranged so that each performed his fair quota, but none excessive; a fraternal law, by which the inhabitants of each village were obliged to help each other when necessary in getting in harvest, building, etc.; a law against extravagance in dress and living, and of all superfluity in anything, which also ordained that the people of each locality should meet and feast together several times each month in order that friendship might be preserved and relaxation afforded; a law that no one should be idle—even the very young and the physically incapable being apportioned tasks suited to their capacity.

The Incas, whilst they governed well at home, were no less wise in their methods against the peoples surrounding them, whose conquest and civilisation it was their policy and mission to undertake.

War was only made, either in self-protection, or for reducing barbarians to civilisation; and before hostilities were commenced, terms were offered, once—twice—thrice, to the enemy. After subjugation the Incas did not destroy the false gods of the vanquished, but brought one of the principal idols to their own capital of Cuzco, with the ruler and some of the chief families, and these latter were shown kindness and favours. Having become imbued with some Inca civilisation, these people were returned to their ancient dignity, and enjoined to live in peace under the protection of the Incas. Also a system of interchange of inhabitants and emigrants was carried out, and in this way the barbarous inhabitants came willingly under the beneficent sway of the empire. The historian Garcilasso states that all these matters are truly vouched for, and



RUINED INCA HABITATIONS ON LAKE TITICACA.

adds—and it seems to be indisputable—that no ancient kings, whether of Asia, Africa, or Europe, have ever shown such wise and liberal treatment, or beneficent use of their powers. Of course, Garcilasso being partly an Inca, his sympathies were undoubtedly with the Incas and in favour of eulogising them, but the accounts of their methods are borne out by other historians, and are undoubtedly founded on fact. Moreover, the traveller even of to-day, in Peru, who sojourns among the Quechua Indians—the descendants of the population who formed the Inca empire—can observe much remaining in customs, legends, and ruins, to largely corroborate historical accounts. These people are still Inca subjects at heart, retaining their former language and custom to a large extent, and receiving with difficulty those imposed by the modern Spanish-Peruvian Government of the Republic.

The position of the Inca empire during the reign of its earlier monarchs was an isolated one—it was surrounded on all sides by barbarous and unknown tribes, some of them exceedingly powerful. To the north were the numerous and savage people who inhabited the valley of Jauja, and of Huaylas: and the Chimus—a civilised people; to the west, the Yuncas, and others inhabiting the coast valleys between the plateaus and the Pacific; to the south, the Araucas of what is now Chile; and to the east, the Antis, and the savages of the Amazonian forests. It was the work of successive Incas to conquer and civilise these peoples—a formidable task.

This work was begun by the first Inca, Manco-Capac, and was still being carried out by the last, Huayna-Capac, until a few years before his death. It was the bounden duty of each and every Inca of the royal line of emperors to go forth and subjugate a new province, and returning to Cuzco—invariably successful—he was received with acclamation and rejoicing, after the manner of the Romans.

Remarkable as the conquests of the Incas were, according to their history, still more remarkable were their domestic arts and works, which are such as show an advanced stage of progress along the road of civilisation.

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Nor is there any gainsaying these, for their ruins and remains still exist, and can be studied by any traveller who may journey thither. Among the principal of these matters are :—

Buildings and Construction Works.—These include temples, palaces, fortifications, habitations, tombs and sepulchres, roads, aqueducts, irrigation canals, bridges, astronomical observatories, rock-terraces, *andenés* or cultivated terraces, and so forth.

Mining and Metallurgy.—The working of the great alluvial gold mines ; the mining of silver, lead, and copper ores, and their smelting and refinement in furnaces ; the making of copper tools ; goldsmiths' and silversmiths' handicraft, etc.

Weaving, etc.—The manufacture of fine wool garments, blankets, mats ; the making of hats, shoes, etc., and the dyeing of fabrics.

Pottery, of beautiful workmanship.

Astronomy.—The Incas determined the solstices and equinoxes, they observed the phases of the moon, and eclipses of the sun and moon, but were ignorant of their causes.

Geometry and Geography, as relating to land measure, were practised, and to the making of topographical models of clay, showing roads, ravines, cities, streams, etc.

Arithmetic, as also calculations, carried out by means of knots on strings of different colours—these were the *quipos*.

Music.—They made and played instruments of hollow reeds.

Medicine.—In bleeding and purging, and the application of herbs, etc.

Poetry and Drama.—In the making and singing of love-songs, and the recounting of the deeds of their ancestry, and also of the action of the elements and other phases of nature. There is a famous Inca drama existing.

The works by which the Incas have retained most lasting fame are their structures—the buildings scattered all over the great region of the Andes and the coast plains. As to the great Inca roads—those famous highways which

have often been written of—there is but little remaining, and indeed, as regards these, there is no doubt that their importance as engineering works has been much exaggerated. However, they did exist, and the author has traversed them at various points, principally that portion which followed the high plateaus from Cuzco to Quito, in the neighbourhood of the Upper Marañon, between Huaraz and Cajamarca. Let us see what the historian Garcilasso says, although even he quotes principally from other writers in his description of these roads.

He states that the construction of the two famous roads is attributed to Huayna-Capac, almost the last of the Incas. He it was who gained the largest increase of territory, and who took great pains to enforce the civilisation of the Incas upon the surrounding tribes.

“Thus a barbarous and unlettered people worked with such order and union that they made these famous roads, which should not be allowed to pass into oblivion. For none of those works which the ancients describe as the seven wonders of the world were executed in the face of such difficulties as were these roads.”

It is stated that the road which was constructed along the chain of mountains was 500 leagues in length, and this ran between Cuzco and Quito, which is about that distance. It is also stated that when it was finished, “a cart might have been driven along it,” but this is probably an exaggeration, as no vehicle could ever ascend and cross the high passes of the Cordillera, or traverse the broken ground of these regions. In general these roads do not afford any means of journeying save on mule back, nor could they ever have done otherwise. Of course, the Peruvian in the time of the Incas, in pre-hispanic days, possessed no mules, horses or oxen, nor any four-footed beast save the *llama*, etc., and naturally vehicles were unknown to them, as indeed they are almost to the inhabitants of the towns of the Andes to-day. There was therefore no necessity for roads for vehicles among the Incas.

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Other writers quoted by Garcilasso say :—

“From the city of Cuzco there are two roads, or royal highways, 2,000 miles long, the one passing along the coast plains, and the other over the tops of the mountains, so that it was necessary, in their construction, to raise the valleys, cut away the stones and living rocks, and lower the heights of the mountains. They were 25 feet in width. This work is more wonderful than the edifices of the Egyptians and the Romans.”

As to the coast road, it is said that as many difficulties were encountered in its construction as in that of the mountain road, and that trees were planted all along it, watered by irrigation channels. And another writer says, that these roads were paved with stones 10 feet square, and that all along them were beautiful castles, at a distance of one day's journey apart, built expressly for the comfort of travellers.

Probably most of these glowing descriptions were written by persons who had not travelled in these mountainous regions of the Peruvian sierra; for it is quite possible to see, even now, what the character of these structures was. They were certainly works of very great merit and utility, but could hardly be termed “roads” in the modern sense. Yet without them—and portions of them still form the trails used to-day—these regions would have been quite inaccessible to travel. The snowy summit-passes were crossed by trails, partly hewn out of the rock, and partly built up of rude steps, taking advantage of natural features in the topography; the trail was excavated and banked up on steep hill-sides, and where it crossed the numerous swamps and morasses of the uplands, rough slabs of stone were laid down—flags of limestone or blocks of quartzite, dug from the strata or outcrop of the rocks passed through. Bridges and causeways were made of large monoliths, but the most famous of the bridges were those formed of cables woven of osiers and of prairie grass, in the form of suspension bridges. One of these crossed the Apurimac river, and another the Desaguadero, the

former having been of a span of 200 paces. The roads, therefore, were all that was required for their purpose; no uniformity of grade, alignment, or curvature was necessary or attempted, as the only means of traffic over them was that of *llamas*—as beasts of burden—and foot-passengers. The Indian of these regions always prefers to scale a hill rather than go round it.

If these roads were not adapted to means of locomotion by any but foot-passengers and the slow *llama*, which walks but a few miles a day, with its pack of 100 lbs., feeding as it goes, nevertheless, rapid transit was performed over them by the native postmen. For, in primitive Peru, mail-carriers had been established before they were thought of in Europe. At the end of each stage of about $1\frac{1}{2}$ leagues, all along the road, were small houses, wherein two Indian messengers were stationed night and day. One of these received the message to be carried, from the proceeding messenger, who shouted it whilst he was approaching the station; so that when the latter actually reached it, the other was already on his way to the next post. Remarkable speeds were performed by these messengers, and it is stated that they covered the distance from Cuzco to Quito, some 1,200 or more miles, with the windings of the road, in twenty days, or 2,400 miles for the double journey. A day's staging of 120 miles was a common performance, and it is to be recollected that high mountain passes had to be crossed *en route*.

The buildings which the Incas made were really worthy of admiration, and their ruins still command such. The most famous and enduring of these are the cut-stone edifices, which are found on the uplands or sierra regions, as at Titicaca, Cuzco, Huánuco, etc. Others, which were constructed of adobe or sun-dried earthen bricks, and whose ruins are found in the coast region, are naturally less well preserved, although the rainless climate has permitted their existence up to the present day, in some cases. The innumerable ruins of buildings of unhewn stone, as castles, habitations, tombs, terraces, etc., which

are found all over the sierra regions, and which were doubtless in many cases constructed by the barbarous tribes which were dominated and civilised by the Incas, are of much less elaborate construction, although, nevertheless, of much interest to the traveller. These *casas de los gentiles*—houses of the gentiles—as the people of the sierra term these old dwellings of the former inhabitants, are often most weird and curious in their ruinous abandonment, and are found often in the most inaccessible places, especially in the region of the Upper Marañón.

Among the most famous of the cut-stone edifices are those of Tiahuanaco; those of Cuzco, as the great fortress of Sacsaihuaman; the Temple of the Sun; the palaces of Huayna-Capac, and of Pachacutec; the ruins of Ollantaitambo; the astronomical observatory of Intihuatana, and others; the ruins of Huánuco Viejo, Chavin, etc.

It is impossible to more than touch upon these wonderful erections here. The remarkable features about them are, the enormous monoliths of which they are composed in some cases, and the cutting, carrying, and placing of these by people without mechanical appliances; the extraordinary system of stone-masonry, by which the stones of the wall are irregular polygons—not cubes—often with numerous angles, and, in spite of this, the exact adjustment of one stone to its fellows, no space being left between them—the joint not admitting even the insertion of a knife-blade. As these masons had no method of laying out the stones previous to hoisting into place, the fitting must have been done by the excessively laborious manner of continually removing and replacing the stone, in the course of erection. One of the stones at Cuzco is 38 feet long, 18 wide, and 6 deep. Another of these stones forms a polygon of twelve angles. No mortar was used, but gold and silver were sometimes placed between the joints, as a bedding material. The builders had no iron or steel tools—although tempered copper was used—nor means of carrying these stones save by that of hauling them with cables; and some of them were brought from their quarries by this means for a distance



INCA MASONRY : BASE OF THE PALACE OF HUAYNA CAPAC AT CUZCO.

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of many leagues, crossing ravines, rivers, and rugged mountain slopes and passes.

The masonry of the Incas is calculated to endure practically for ever, as far as the ravages of the elements, earthquakes, etc., are concerned, due to the care and solidity which entered into its construction. It is of exceeding beauty and interest, from whatever point of view it may be considered—an indelible page of the life of the original inhabitants of the Andes. Also, the wonderful adornment of the interiors of their temples and palaces by the Incas, with plates of gold and silver; the fashioning of life-size statues, and of gardens of plants in exact imitation of nature; of sheep and other animals; all in pure gold, which are described by the old historians of Peru, form another engrossing chapter of their history.

The religion of the Incas was in keeping with the morality and philosophy of their customs and laws. Whilst they adored and offered sacrifices to the Sun as a visible god, they, nevertheless, sought for and imagined a Supreme Being, an all-pervading power or influence, who could have no visible or tangible form, and whom they enshrined in their hearts and temples as an “unknown god,” under the name of Pachacamac—a word which, translated, signifies, “He who gives animation to the universe.” The image of the Creator was represented in the temple at Cuzco by a large flat plate of fine gold, of an oval or elliptical form. The chaste religion of the Incas superseded, throughout the great regions which they conquered, the gross idols of the barbarous tribes inhabiting them, and which, together with the savage rites, customs, sacrifices of human flesh, and cannibalism which in some cases these tribes followed, disappeared before the civilising influence of these remarkable people.

The Inca social *régime* may be summed up as a species of Socialism, yet under the rule of an absolute, but beneficent, monarch. It appears to have been a successful system of organisation, and distribution of the products and wealth of the country to the requirements

of all its inhabitants. It was philosophical and just in that it recognised, not only that every citizen had a right to live, but in that it afforded him the means of living, by the practical utilisation of each man's birthright—the natural resources of his country. Against the system it may be urged that personal initiative was discouraged, or not developed, as it is in the "struggle-for-life" method which is the basis of modern civilisation, and it has been considered that its nature was conducive to its downfall when attacked from the outside.

But the end of the Inca empire draws near. The two brothers, contestants for the throne, Huascar and Atahualpa, have thrown aside the prudence of their forefathers, and are at war. Already rumours of a strange large ship upon the coast, and of white-faced, bearded men, have been brought by Indians from the littoral. The isolation of the New World is drawing to an end; the shadow of Spain is to be thrown athwart the Andes.



PIZARRO.

From Portrait in City Hall, Lima.

To face p. 31.

CHAPTER III

HISTORY (*continued*)—THE CONQUEST

1513-1532

Early voyages—Panama—Pizarro and Almagro—First expeditions—Hardships of the Spaniards—Coast zone—Tumbez—The famous line—Fresh expedition—The march to Cajamarca—Messengers from Atahualpa—Inca roads—Inca empire—Occupation of Cajamarca—Meeting with Atahualpa—The friar Valverde—Battle with the Incas—Massacre of Indians—Capture of Atahualpa.

AT the time when the early Peruvians were living their pastoral life, which was disturbed by the drama of war between their rival chiefs, without any knowledge of the doings of a great outside world, the adventurous barks of Europeans had set sail westward, and a new horizon opened to man in the discovery of these new continents which slumbered under the setting sun.

Panama had been settled by the Spaniards, for Balboa had crossed the isthmus in 1513; Magallanes had traversed the straits, and his pilot had gone round the world in 1521; Andagoya had made a voyage down the South American coast in 1522 towards the region which Balboa had already named Peru, and Pizarro and Almagro set out on their first expedition in 1524.

Francisco Pizarro, son of Gonzalo Pizarro, of Trujillo, in Spain, was a small landed proprietor of the city of Panama. On the return of Andagoya from his expedition, Pizarro, fired with the spirit of conquest and discovery, formed a company with Diego Almagro, for the obtaining of a ship, and left Panama on 14th November 1524, with one hundred and twelve Spaniards in his company, and some Indian servants.

After some two months voyaging they arrived at a place which they termed Port Famine, having previously put ashore at various places without having encountered any inhabitants. A number of the crew had perished ; the provisions were nearly exhausted, and none were obtainable upon that inhospitable coast. Pizarro despatched the vessel homewards for supplies, remaining with eighty men to await its return, with the expectation that this would be accomplished in twelve days. But forty-seven days elapsed before she returned, during which time more than twenty men died, the company having subsisted on sea-weed, some bitter palm-fruits, and a tanned cow-hide, which latter had been boiled and divided.

Having refreshed themselves with the new supplies, the captain and his company continued their voyage southwards. They came to a town built upon the shore, surrounded by palisades. The inhabitants fled, but the next day armed men arrived ; a battle ensued, and the Christians, weakened by their former hunger and hardships, were defeated—Pizarro being wounded seriously, and at first left for dead. Seventeen other men were wounded, and five killed ; and seeing the result of the disaster, Pizarro returned to the Island of Pearls, nearer Panama, sending the ship on to Panama for repairs.

In the meantime, Captain Diego de Almagro had sailed from Panama in search of Pizarro, going as far south as the town where the latter had suffered defeat. Having reduced this place, he followed the coast without finding traces of Pizarro, and returned to the Island of Pearls, joining forces there. It was agreed that Almagro should now go to Panama to collect more men and money to continue the enterprise. Much obstruction was caused by the governor, but Almagro at length returned with one hundred and ten men.

The two captains in their two ships, with a total of one hundred and sixty men—one hundred and thirty had died—coasted along the land, piloted by the experienced and resolute pilot, Bartolomé Ruiz, a native of Andalusia. Obtaining provisions from the shore, they continued to

sail in this way for three years, suffering hardships from hunger and cold. The greater part of the crews died of hunger, scarcely fifty surviving, and during all that time no good land was discovered, for all was swamp, without inhabitants.

At San Juan, Pizarro remained with the few survivors, sending Ruiz south to discover good land, with one ship; and Almagro to Panama, with the other, for more men and supplies.

It must here be recollected that the coast of South America presents some remarkable characteristics. That portion which forms the littoral of modern Colombia and Ecuador is subject to heavy rainfall and tropical conditions, and is covered with dense vegetation. But south of this, on the coast of Peru, these conditions abruptly change, giving place to an absolutely sterile and rainless region, without vegetation of any nature except that grown under irrigation. This region, though barren, is healthy, and the curious change of climatic conditions is brought about by the influence of the Andes, and of the Humboldt current.

After a period Ruiz and his crew returned. They had visited various places inhabited by a more intelligent people than previously met with, and rich in gold and silver. They brought six Indians, some of them natives of Tumbes (which is now the northernmost part of Peru), together with gold, silver, and clothes. The farthest point reached was the Cape of Passaos; and Ruiz the pilot was, therefore, the first European to cross the line in the Pacific.

Pizarro and his companions received all this news with joy. Their hardships and sufferings were forgotten; the expenses and losses they had incurred, ungrudged. The exhilaration of treading those unknown lands filled their veins, and, Almagro having arrived from Panama with a ship laden with men and horses, the two vessels, with all their complement, set out from the San Juan river towards the newly-discovered region.

After difficult navigation and various vicissitudes, they arrived at what is now the town of Atacames, in Ecuador;

large, well-peopled villages then, whence more than ten thousand Indian warriors advanced to meet the ninety Spaniards who had disembarked. But seeing that the Christians intended no evil, the Indians desisted from war. There were abundant supplies, and the people led well-ordered lives, the villages having their streets and squares, some of them with more than three thousand houses.

But the Spaniards saw that nothing could be done with their small force, and they decided to return northwards again to the island of Gallo, where Pizarro stayed, Almagro once more returning to Panama with the ships for more men. Now, the Governor of Panama, having received letters from discontented members of Pizarro's crew, which had been surreptitiously sent him, complaining of their terrible hardships, and wroth at the results of these expeditions, sent a ship with orders to bring back all those of Pizarro's men who desired to return. The intrepid Pizarro, seeing his men abandon him and returning to the ship, then drew upon the sand with the point of his sword the famous line, speaking in this wise: "Gentlemen, this line signifies fatigue, hunger, wounds, and other dangers to be encountered in the conquest—let those with valour to overcome them cross the line in token of their resolution to be my faithful companions. Let those who feel unworthy of such daring return to Panama!"

Some sixteen men only crossed the line and remained; the rest returned to Panama. These sixteen were later created *Hidalgos*, as a reward for their bravery and constancy in the royal service; and even to-day in Peru some of their names are among the most prominent families of the country.

Pizarro stayed on the island some months, when a small ship returned from Panama, by permission of the governor, in which further explorations were made southwardly along the coast; villages encountered, and gold, silver, and cloths brought away. He landed at Tumbez, and thence sailed southward along the coast of Peru as far

as the river Santa. This river flows down the valley of Huaylas, between the parallel chains of the Andes, in which the city of Huaraz is situated, and is one of the most populous parts of Peru at the present day.

The time allowed by the Governor of Panama for the expedition had now expired, and Pizarro returned. The conquest of Peru was not yet to be undertaken. Both Pizarro and Ruiz had spent their money and their credit, and, borrowing a small sum from his friends, Pizarro went to Castille, and gave an account of his work to the king. He was promoted, and given powers of rulership over the lands he intended to discover, and, animated with zeal, he returned to Panama, whence, taking his four brothers with him, he sailed forth once more towards Peru with three ships, one hundred and eighty men, and thirty-seven horses. This was in January 1531.

And now the real conquest of Peru begins. A successful voyage was made; men and horses were landed on the coast, villages were encountered, gold and silver taken, as also provisions and supplies. Further reinforcements were received from Panama; the island of Puna, in the Gulf of Guayaquil, was invaded, and some treachery by its numerous inhabitants having been planned to kill the Spaniards, these attacked the Indians, when a large number were killed, and their leaders burned or beheaded. Then the town of Tumbez was attacked, great punishment being inflicted upon the inhabitants, before they were brought under subjugation. Gold had been remitted to Panama, reinforcements were again received, conquests and punitive expeditions along the coast places were continued. All these matters were really but the beginnings of the Conquest, for the seat and empire of the Incas and their power and civilisation was not on the coast, but beyond the rocky fastnesses of the maritime Cordillera.

Of these great matters Pizarro now received intelligence. Now it was that he heard of the great chief Atahualpa—the emperor of the Incas—and of the vast and populous valleys of Cajamarca and Cuzco; and on 24th September 1532 he began that memorable march to the former city—

the march that was the prelude to the destruction of the civilisation of the Incas and of the empire of Peru.

Having settled and organised the town of San Miguel, in the valley of Piura, some few leagues from the coast—which served him as a base of operations—Pizarro departed in search of Atahualpa, towards the interior. The company mustered sixty-two horsemen and one hundred and two foot-soldiers. The first stopping-place was the village of Pabur, still in the fertile valley of Piura. Here information was obtained about the road to Cajamarca, also that further on there was a great town called Caxas, occupied by a garrison of Atahualpa, waiting for the Spaniards if they went that way. Cajamarca and Caxas are both on the eastern slope of the Andes, upon the watershed of the river Marañon. The great snowy Cordillera, until then unknown and uncrossed by the foot of strangers, now lay at their left hand.

Captain Hernando de Soto, with a force of horse and foot, was sent on to endeavour to inspire the Inca with peaceful sentiments, in case it was found that his intentions were warlike, whilst Pizarro went more slowly forward, reducing peaceably various villages, reorganising his force and resting the horses. In eight days Soto returned. He had arrived at Caxas, had found strong buildings, had heard that Atahualpa was absent with most of his force, and had received information of the wonders of Cuzco, the capital of the Inca empire, some thirty days' journey therefrom along the famous Inca road. Proceeding onward, he had arrived at Huanca-pampa, where he had found fine cut-stone edifices, bridges, and other structures announcing the high state of civilisation of the people. With Soto had returned messengers of Atahualpa, bringing presents for Pizarro, and assurances of peaceful intentions on the part of the Inca.

The messenger was well treated, and returned with greetings from Pizarro, and the message that the Spaniards were marching to visit the Inca emperor. The Spaniards crossed the deserts and traversed various fertile valleys of the foothills, with numerous villages. The inhabitants were

questioned regarding Atahualpa, as to whether he was waiting them with pacific or warlike intentions, but none of the Indians would tell, as they held Atahualpa in great fear, due to his severity and the cruelty of his methods. One of the principal men was then taken apart and tortured¹ by order of Hernando Pizarro, when he disclosed the fact that Atahualpa waited with hostile intentions, meaning to kill the Spaniards, and that he had divided his army into three detachments—one at the foot of the mountains, one on the summit, and another at Cajamarca, a total of fifty thousand soldiers. Nevertheless, a chief of this place was sent forward to Atahualpa charged with pacific messages, and the Spaniards continued their march, arriving at the close of each day at a village with a walled house like a fortress. They were, in fact, passing along one of the famous Inca roads—that which traversed the coast zone, which have been described elsewhere.

They now reached a point where the road bifurcated—one branch going to Chíncha and thence to Cuzco, the other ascending the slope of the Andes towards Cajamarca. This latter they followed, Pizarro fixed in his resolve to confront Atahualpa wherever he might be; and he exhorted his followers in the name of the holy Catholic faith that they should continue their march, in order to bring the infidels to a knowledge of the truth, says their historian.²

Having arrived at the base of the Cordillera, a council was held, with the result that a rear-guard and the baggage was left, forty horse and foot commencing the ascent. The horsemen were obliged to lead their horses up in places, the road being formed of steps in the rock, for, indeed, no such four-footed beasts had ever passed that way, and the mountain trails were formed only for foot-passengers and *llamas*. They are not much better in many places, even in this year of grace 1908, and the traveller of to-day in his journeys, in ascending and crossing the Andes, will not find

¹ Torturing was a frequently employed method of Hernando Pizarro.

² Xeres : Pizarro's secretary.

it difficult to picture the obstacles which barred the passage of these pioneer horsemen of four centuries ago.

The Spaniards arrived at a fortress, built in such a place where a whole army might have been held at bay, but it was undefended. Both men and horses, accustomed to the warm coast zone, suffered severely from the cold. The Indians were examined—did Atahualpa desire peace or war with the Christians? It was learned that he was at Cajamarca with a large force, but his intentions were unknown. But, shortly, messengers arrived from Atahualpa with presents of sheep and pacific messages. From them the Spaniards learned the condition of affairs in the empire of the Incas—the war being then waged between the two brothers, Atahualpa and Huascar, for the sovereignty of the country.

The Spaniards rested in their tents, making fires to protect themselves against the cold of those inclement uplands, for they were now upon the treeless *puna*, or plateaus of the Andes, where the only vegetation is the *ichu* grass. Here some Indians arrived with presents of sheep from Atahualpa, and after being questioned, gave the information that the Inca chief was at Cajamarca waiting for the Spaniards; that he had only a few troops with him, having sent most of his soldiers to make war against his brother Huascar.

The messengers returned, impressed with the messages given them by Pizarro, who boasted of the conquests already made, and menaced the Incas if they should prove hostile, but offering friendship and peace. The march was continued, and again other messengers arrived among the Spaniards of the peaceful intentions of Atahualpa. The principal ambassador was served by his companions as a high official, drinking out of cups of gold, and he offered the Spaniards drink out of these, of *chicha*, the native Peruvian beverage made from fermented *maiz*. But on the following day, one of Pizarro's messengers—an Indian chief—who had been sent to Atahualpa, returned, and rushing at the ambassador, assaulted him, accusing him of lying and treason, and assuring the Spaniards



PART OF MODERN CAJAMARCA AND PORTION OF ATAHUALPAS' HOUSE.

that they were being tricked by these peaceful protests; that Atahualpa was actually awaiting them in battle array, and had laughed at the messengers' account of the power of the gun-fire and of the horses.

On the next day Pizarro and his force advanced to Cajamarca—troops under arms and prepared for any encounter—and entered the town on Friday, the 15th November 1532. A message was sent to Atahualpa announcing the arrival; the town was examined, and the position found to be excellent from a defensive point of view.

The valley of Cajamarca and plain surrounding the town is traversed by a river. The soil is fertile, and the cultivated *campiña* forms one of those vast oases, habitable for man, which exist in the inter-Andine valleys of the Peruvian Cordillera. The houses were found by the Spaniards to be well constructed, with walls of cut stone and thatched roofs. A large *plaza*, or square, occupied the central part of the town, and here the Spaniards remained, awaiting some message from Atahualpa. Hernando de Soto, with twenty mounted men, charged to pick no quarrel, was despatched to summon the Inca, at his camp, and their advance was covered by the Spaniards' artillery—consisting of two falconets—which was posted in the fortress. Hernando Pizarro was, furthermore, sent with other twenty horsemen, and crossing the river, they arrived at the camp of Atahualpa.

The Inca was at the door of his lodging, surrounded by a bodyguard of soldiers, and his women. He wore the *llautu*, the Inca ensign of sovereignty, which is a fringe of plaited crimson wool, hanging down upon the forehead. Soto, it is stated, forced his horse's head in front of the face of Atahualpa, until the breath from the animal's nostrils moved the fringe upon his forehead. But the stoic Inca, notwithstanding that he had never seen a horse before, showed no terror, nor even raised his head.

Soto addressed the Inca through an interpreter, but no reply was vouchsafed, save that a chief made some answer; and at this juncture Hernando Pizarro arrived. Reproaches

were made by the Inca then concerning some alleged ill-treatment of his vassals by the Spaniards, and the theft of some cloth. But, nevertheless, Atahualpa assured them of friendship, and stated his intention to visit the governor, Pizarro, on the morrow. Women brought in gold vases of *chicha*, and the Spaniards were prevailed upon to drink. The Inca's camp was on the skirts of a small hill, and the army, consisting of some thirty thousand men, were encamped in cotton tents, their lances stuck in the ground in front.

A good watch was kept in the Spanish camp that night, when the messengers returned; and when on the following day Atahualpa sent notice of his coming—with unarmed troops—the Spaniards posted their forces behind the walls of the *plaza*; the foot, horse, and artillery duly disposed for assault or defence, such as circumstance might dictate, and men were specially told off to seize the person of Atahualpa if treachery were intended. Pizarro and his officers went their rounds among the soldiers, exhorting them to be of faith and courage; that if fight they must, there were five hundred Indians for every Christian, but that the Almighty was on their side.

The sun set; the Indians on the plain below were seen to be in movement, those in front, it was stated by a scout, having weapons concealed beneath their tunics, which seemed to betoken some treacherous design. First came a squadron of Indians dressed in different coloured livery, like a chess-board, and they swept clear the road with brushes for the monarch to approach. Then three squadrons in different dresses, dancing and singing, followed by men in armour with crowns of gold and silver. And among them, in a litter adorned with plumes of coloured feathers and plates of gold and silver, borne high on Indians' shoulders, came the great Atahualpa, the last of the Inca chiefs.

It was then that the Friar Vicente Valverde, at the instigation of Pizarro, with a Bible in one hand and a cross in the other, and accompanied by an interpreter, advanced and addressed the Inca—the Spaniards still being concealed

by the walls of the *plaza*. It was then that the Inca was exhorted to render tribute to the Emperor, the Pontiff, and the God of the Christians, by whose mandate and in whose service they had arrived thither. And the haughty Inca, opening the Bible which had been put into his hand, turned its pages, and then threw the book from him.

There are various versions of this incident, but no doubt exists that the friar—the rascally friar, as some historians term him—was a peace-breaker, and he began to call with a loud voice: “Christians, I call upon you to avenge this insult to the faith!”

Atahualpa stood up in his golden litter, addressing his soldiers and ordering them to be prepared. Pizarro grasped his sword and dagger, and with four men rushed valiantly among the Indians and seized Atahualpa. The trumpets were sounded, the guns fired, both horse and foot charged forth, fell upon the Indians, slaughtering and massacring, and the life of the Inca was only saved by Pizarro’s intervention, all his litter-bearers falling in the onslaught.

The one-sided battle was soon over, for the Indians raised no hand in self-defence—they were stricken with terror and astonishment at the sound of the guns, the charging of the horses, and the suddenness and ferocity of the Spanish assault. When the pursuing Spaniards returned no casualties were reported, notwithstanding that thousands of captives were brought in like sheep, and that there were two thousand Indians lying killed in the *plaza*. Pizarro and his men, sated with slaughter, spared these captives, and liberated them. Atahualpa was treated well, lodged unconfined, and his women and attendants permitted to him. The Spaniards, astonished at their own easy and miraculous victory, rendered thanks to heaven for the special aid which—in their eyes—had been vouchsafed to their arms. The conquest of Peru was assured by this great stroke of valour and fortune.

CHAPTER IV

HISTORY—THE CONQUEST (*continued*)

1533-1541

Condition of Inca empire—Atahualpa—Murder of Huascar—The famous ransom—Indian messengers—Pachacamac—Arrival of treasure—March of Hernando Pizarro—Huánuco—Division of the ransom—Execution of Atahualpa—Advance to Cuzco—Plate-ships—Division of territory—Lima established—Indian rising—War between Pizarro and Almagro—Execution of Almagro—Death of Pizarro.

ATAHUALPA, as has been stated, was the illegitimate son of Huayna-Capac, one of the most famous of the Inca emperors. His brother Huascar was the real heir to the throne, but Atahualpa, who had been apportioned that part of the great Inca empire which had Quito as its centre—now Ecuador—coveted also the main territory governed from Cuzco by Huascar. But the latter appears to have been the aggressor, for he had declared his intention of depriving Atahualpa of his portion of the sovereignty, and had placed an army in the field with that design. A great battle was fought between the armies of the two brothers, in which Atahualpa triumphed, conquering all the provinces, and sending a force of forty thousand men to Cuzco. This, the wealthy and classic capital of the Incas, was reduced, a great many people killed, barbarities committed, its vast treasure seized, and Huascar taken prisoner. The entire policy of the rule of the whole foregoing Inca dynasty was reversed and ruined by these ambitious and unscrupulous princes. The love of order, work, and the *régime* of fraternal regard, which was the

basis of the Inca rule, and which had so marvellously bound those varying tribes together throughout the centuries, was destroyed ; the kingdom was divided against itself, and its fall was at hand. In this condition was it when Pizarro and his Spaniards arrived, and the incidents narrated in the foregoing chapter took place.

Atahualpa was a man of some thirty years of age, stout, good-looking, with a face handsome and fierce, with bloodshot eyes. He was a good reasoner and speaker, and the Spaniards considered him wise. He was of a cheerful disposition, but exceedingly haughty towards his subjects, and was, in effect, an ideal type of semi-barbarous potentate. The tidings of his captivity having gone about, numerous great lords came to do him homage. And then messengers which came from Cuzco, who had been bringing Huascar prisoner, gave tidings that Huascar had been killed. He had been drowned on the arrival of the news of Atahualpa's capture. At this Pizarro showed great displeasure, notwithstanding that the Inca assured him that the murder had been committed without his knowledge.

Just previous to this, Atahualpa, fearing that sooner or later the Spaniards would kill him, made the offer of the famous ransom.

"How much can you give, and in what time?" asked Pizarro.

For reply, the captive Inca reached up at arm's length to a white line which ran round the wall of his apartment, and swore he would fill it with gold—jars, pots, vases, lumps, nuggets and dust—up to that height. The room was 22 feet long and 17 wide ; the height, that of a man's stature and a half. In addition, he would fill the entire chamber twice over with silver. All this should be performed in two months, if the Spaniards would liberate him.

This remarkable offer was accepted. The Inca was bidden to have no fear, and to send off his messengers at once to procure the treasure. Accordingly, he despatched runners to his captains at Cuzco, ordering them to send two thousand Indians laden with gold and silver. The system

of posting by Indian runners was a remarkable feature of the organisation of the Inca empire. The messengers ran short distances at great speed, and on arriving at the next post, shouted their message to the waiting runner there, who immediately started off, and so forth, throughout a vast number of stages over the great distances along the Cordilleran roads which separated these cities.

"In five days," said Atahualpa to Pizarro, "my runners will have carried their message to Cuzco."

The distance to that city from Cajamarca is about 750 miles, and the traveller to-day over those long and fatiguing mountain fastnesses, crossing interminable ravines, ascending snowy passes, slipping on the perpetual ice-cap, and braving the fury of the Andean gales, can picture to himself the agility and endurance of the patient native of these inclement regions at that time.

Atahualpa informed Pizarro as to the great temple of Pachacamac, and the wonderful stores of treasure there. This was the temple of the "unknown god" of the Incas, slightly to the south of Lima, at Lurin, a portion of whose ruins still remains. Pizarro denounced this temple and religion to the Inca, averring that they were things of the devil, and taunting the Inca with the evident futility of a god which had permitted him to be brought to such straits—a view which seemed to have weight with Atahualpa. Then Hernando Pizarro was despatched to Pachacamac.

At length stores of gold began to arrive: vases, jars, and pots of the precious metal, some weighing two or three *arrobas* (of twenty-five pounds). Day after day gold and silver came in, thirty, fifty, sixty thousand *pesos* value daily, and was placed in the treasure house, which was guarded day and night. Word arrived that a vast quantity of gold was on the road at Jauja, and in view of the delay Pizarro despatched three Spaniards thither, with instructions also to take possession of Cuzco in the name of the King of Spain. These emissaries were common soldiers, and their behaviour was such that it was necessary to send Hernando de Soto and others after them.

Whilst these matters were pending, Captain Diego de Almagro reached Cajamarca, having been urged by Pizarro to come there from San Miguel, where he had arrived with men and ships. He was well received by Pizarro.

Hernando Pizarro had set out from Cajamarca on 5th January 1533 with twenty horse and some foot, his destination the temple of Pachacamac on the coast, and his object the stores of treasure it contained. He arrived shortly at the town of Huamachuco, upon the road to the coast, and there encountered a brother of Atahualpa, who was bringing gold for the ransom. A remarkable spectacle had met the gaze of the Spaniards. As they were marching along one of the winding mountain roads, they beheld far off on the opposite side of a valley a gleaming golden line, shining in the sun. What was it? It was a long train of Indians resting by the road-side, with rows of golden vases which they were bringing from Cuzco, part of the ransom of Atahualpa.

Hernando Pizarro acquired information about the road, and heard of rivers, bridges of network, and difficult passes which had all to be traversed. He crossed from the Marañon watershed, and reached Corongo, passing the main range of the Andes by a difficult summit trail formed of flights of stone steps, after the manner of the Inca passes, and where the horses journeyed with great difficulty. A rapid river, spanned by the famous suspension bridges of the Incas, made of great cables woven of osiers, was crossed, and thence cultivated valleys with fields of *maiz* were encountered, with villages of Indians, who received the travellers well. Shortly afterwards they reached Huaraz, now the capital of the present Department of Ancachs, an important city in the valley of Huaylas. The snowy Cordillera is crossed by an Inca pass which still exists, probably that by which Hernando Pizarro entered, and which the traveller to-day there ascends on mule-back.

From Huaraz the Spaniards proceeded down the valley of Huaylas, or Santa, leaving the royal road which follows among the ranges of the Cordillera to Cuzco, and

taking that which leads to the coast. They stopped at Parpunga, where existed a building with seven encircling walls, curiously painted inside and out, with well-built portals. The people were full of fear at the sight of the horses and of these white men, whose like they had never beheld. But the captain reassured them, and continuing their journey, the Spaniards followed along the Inca coast road, fording the rapid and swollen rivers which descend from the maritime Cordillera to the Pacific, and sojourning in the numerous villages of the littoral until, crossing the river Rimac and the site of the present city of Lima, they arrived at their destination—the famous Pachacamac, where to-day the ruined remains of the city and temple exist, in the desert on the left bank of the river of Lurin. This was on Sunday, 5th February 1533.

Pachacamac was a stronghold of idolatry, according to some historians, and of the refined monistic religion of the Incas, according to others. The Spaniards destroyed the idols they found there, and endeavoured to convert the chief men of the town to their own faith. Presents of gold were brought in by the people, and with that taken from the temple ninety thousand *pesos* were collected. The priests, it is stated, concealed four hundred loads of gold and silver, and this vast treasure is supposed still to be hidden in the sand of the desert near at hand.

It was now part of Hernando Pizarro's mission to hurry on the main treasure of gold which was being brought from Cuzco by a chief of Atahualpa, and due to the evasions of this chief, the Spaniards were obliged to make for the city of Jauja, where the loads of gold were being delayed. They therefore ascended once more towards the interior, by the royal road, and arrived at Jauja. This is a city well situated in the fertile valley of Huancayo, between the maritime and eastern Cordilleras, enjoying a most salubrious climate. To-day the traveller may reach this valley by means of a branch line from the Oroya railway which ascends from Callao on the coast. This line is now nearing completion.

Thirty loads of gold were obtained at Jauja, and some

forty other loads two days afterwards, and on 20th March Hernando Pizarro and his followers left the city to return to Cajamarca. On their way they passed the great lake of Chinchaycocha, or Junin, the source of the Jauja river, 12,940 feet elevation above sea-level. Upon this lake are situated the great Cerro de Pasco mines, at present being worked by a North American company. Plains covered with flocks they passed, amid severe snowstorms, and in a few days they arrived at the city of Huánuco, upon the royal road.

The almost unknown ancient ruins of the abandoned city of Huánuco¹ are of much beauty, portions consisting of cut-stone doorways and walls, the former of typical trapezoidal Inca form, where the tendency to the pyramidal character in structure is exemplified, which is one of the links with a supposed Egyptian origin of the Inca civilisation.

Leaving this point the Spaniards continued onward, traversing woven bridges and difficult summit-passes formed of steps cut in the living rock. They passed Lake Lauricocha, the main source of the Marañon, and at length, journeying by the same stages by which they came, Hernando Pizarro and all his companions arrived again at Cajamarca on 25th April 1533. They brought with them twenty-seven loads of gold and two thousand *marcs* of silver.

There is something fascinating about this memorable march of Hernando Pizarro. The mysterious mountain fastnesses, with cultivated valleys hidden away therein, and peoples unknown and unknowing until the strangers descended from the clouds of the Andean steppes upon them, mounted on strange beasts. The unfolding landscape; the stone structures and strange bridges and fortresses; the wealth of gold, borne on the backs of men and *llamas*; the unexpected at every turn—all shroud the expedition in a garb of romance and adventure, such as stands strongly out in the history of exploration and

¹ Visited by the author in 1904, and described before the Royal Geographical Society.

conquest. And it is doubly interesting to the traveller of to-day who follows the roads they traversed, changed but little in the lapse of nearly four centuries.

Other loads of gold and silver having come in towards the great ransom, the whole was melted down from the form of plates, bars, sheets, and utensils in which it existed, and produced in all a sum equal to about three and a half million pounds sterling. The melting was done by the Indians, who were good gold- and silversmiths. Among the numerous gold objects were plates and sheets taken from the interior of houses and temples; imitation straws for thatching roofs, made of gold; a throne weighing 8 *arrobas*, fountains and pipes of gold from the gardens and reservoirs; figures of birds and men, life-size; sheep and shepherds of similar nature, and utensils, imitations of trees and flowers, etc.; all in solid gold. The royal portion of the treasure having been deducted, the balance was divided *pro rata* among the Spaniards; from the highest to the lowest each received his share.

His ransom obtained, was the unfortunate Inca chieftain now to be released? No. Information was given to Pizarro that a force of Indians, by secret orders of Atahualpa, was advancing from the north to overwhelm the Spaniards. Confronted with this, Atahualpa denied it, but he was put in chains. It was a false pretext on the part of the Spaniards, but, nevertheless, there was a mock trial, and Atahualpa was condemned to be burnt. The Inca wept, and swore that not an Indian in the land would move against the Spaniards without his orders, and that such orders had never been given. Twelve honourable men among the Spaniards protested against this proposed murder, but Pizarro and Almagro, as judges, and the false and lying interpreter, Filipillo, and the Friar Valverde, brought it about; and Atahualpa was strangled in the *plaza* on the 3rd of May 1533. Hernando de Soto, when he returned two days afterwards from a reconnaissance of the supposed enemy—he found nothing, and had only been sent to get him out of the way—upbraided Pizarro for this act. Tyrant he undoubtedly was, but the murder

of Atahualpa is a black stain upon the pages of Spain's history in the New World.

Circumstances now favoured the advance of Pizarro to Cuzco, but the victorious armies of Atahualpa, and the powerful chiefs who commanded them, were still in the field. Quizquiz, one of Atahualpa's generals, occupied Cuzco, and Rumi-ñauí was at Quito, with Titu Atauchi, a brother of the murdered Inca. Still another brother of Atahualpa—Tupac—was selected by Pizarro as successor to the Inca throne, and by this means it was hoped to ensure obedience from the armies in the field; but the puppet prince died soon afterwards. An attack was made upon the Spaniards by Titu Atauchi, and eight of them were captured, among them Sancho de Cuellar, who had been instrumental, partly, in the execution of Atahualpa. He was strangled in the *plaza* of Cajamarca—against the same pole which had been used for the murder of the Inca—after the town was evacuated by the Spaniards. Chaves, another of the Spaniards captured, who had been one of those who protested against the infamous act, was kindly treated by the Indians, and liberated.

With slight opposition Pizarro reached Jauja, but the bridges between that place and Cuzco had been destroyed by Quizquiz. On arriving near Cuzco the Spaniards were again fiercely attacked, and several men and horses killed and wounded; and for a time their existence was imperilled. But at the moment when it seemed that the Peruvians would triumph Almagro arrived, having come up by forced marches, and, victorious, the whole Spanish force crossed the river Apurímac, and encamped near Cuzco, which city they entered on 15th November.

Manco Inca was the next legitimate brother of Huascar, and he was inaugurated with all ancient splendour, as a diplomatic measure, by Pizarro; and all resistance of Atahualpa's generals was at length crushed out. Following quickly upon the occupation of Cuzco was the conquest of Quito, by Sebastian de Benalcázar, a trusted lieutenant of Pizarro's, in conjunction with Almagro. At this time,

also, the ill-fated expedition of Alvarado, the governor of Guatemala, towards Quito, took place.

About this time (1534) plate-ships were sent to Spain, bearing the vast treasure which had been acquired by the Spaniards; the king's portion, consisting of gold in bars, plates and enormous vases and pots, being brought by Hernando Pizarro on the *Santa Maria de Campo* on 9th July. He was well received. His brother, Francisco, the *conquistador*, was created a marquis, and the Friar Valverde named Bishop of Cuzco. The northern boundary of the region to be ruled by Francisco Pizarro was to be the river Santiago, in attitude about $1^{\circ} 2'$ south, and it was to extend southwards for 270 leagues, under the name of New Castile; whilst Almagro was appointed over territory to be named New Toledo, beginning where Pizarro's ended, and extending southward for 200 leagues.

Grave questions arose between Almagro and the Pizarros which disturbed the peace of the country they had been appointed to rule over. Pizarro entered upon his work of administrator, displaying remarkable abilities. Convinced of the necessity for having the capital of the country upon the coast and in communication with Panama, Pizarro selected a site on the banks of the river Rimac, and established the fine city of Lima, whose name is but a corruption of that of the river itself. The first stone of the handsome cathedral in the great *plaza* was laid by Pizarro on 18th January 1535, and the city was laid out on the plan of parallel main streets, with others crossing them at right angles. Considering that a centre should be established also towards the more northern part of the country, he selected the fertile valley of the Chimú and founded Trujillo, naming it after his native place.

Restful and old-world is the appearance which marks these Hispanic-American cities even to-day. With the absence of the conditions of strenuous commercial life, they are in marked contrast with the towns of Anglo-Saxon America.

Hernando Pizarro returned from Spain, and shortly afterwards went to Cuzco, but he was soon called upon to

defend the city, for on 18th April 1536 Manco raised the standard of revolt against the Spanish dominion. Cuzco was beleaguered—a patriotic effort on the part of the Inca and his followers to recover their former state—and the famous fortress was taken. A great fight took place to recover this, headed by Juan Pizarro, and it was retaken at great cost to the Spaniards, Juan himself falling. Hernando—always cruel, as his former torturing of Indians showed—sought by acts of barbarism to terrify the Indians. Manco retired to the stronghold of Ollantaytambo, and repeatedly repulsed Hernando and his Spaniards. An attack had also been made upon Lima by Titu Yupanqui, an uncle of the Inca, but it was frustrated by Pizarro, and the whole country rose against the Spaniards.

Help was now necessary from the outside, and letters were despatched to the governors of Mexico, Guatemala, and Panama, and some reinforcements received, among the arrivals being Francisco de Carbajal, afterwards famous in Peru. Almagro had reached Chile by a march across the Cordillera, and, returning to Peru by the desert of Atacáma, he reached Arequipa and heard of the Inca revolt. At this addition to his foes Manco gave up hope, and retiring into the fastnesses of the mountainous country between the Apurimac and Vilcamayo rivers, lived in independence with his family and few followers. So was the downfall of the Inca empire completed, and the great and excellent system of government, under which millions of simple people lived a happy and contented life, brought to destruction, to be succeeded by the turbulent elements and factions of the Spanish civilisation. From that period until the present the indigenous inhabitants of Peru have been doomed to oppression and spoliation, and fated to be kept in ignorance.

The quarrel between Pizarro and Almagro grew acute, the latter claiming the city of Cuzco as part of his dominion. A sudden night-attack was made, and Hernando and Gonzalo Pizarro were captured, the city being taken possession of by Almagro on 18th April 1537. Alvarado, advancing from Lima to their succour, was defeated and taken

prisoner. The Marquis Francisco Pizarro, in alarm at the action of his old partner, sent further reinforcements and envoys to treat for his brother's liberation, for his work in the cause of the peace and settlement of the country was shattered by this outbreak. Almagro marched towards the coast, and founded the town of Chincha as his own capital, whilst Alvarado and Gonzalo Pizarro avoided probable execution at Cuzco by escaping, and joined the Marquis at Lima. Negotiations were opened between Almagro and Pizarro, and a meeting arranged to renew their friendship, each to be attended by twelve men only. Both were guilty of treachery in disposing armed forces for each other's capture, and the quarrel over the boundary question at last plunged them again into war, Hernando Pizarro having previously been released on condition that the possession of Cuzco should be temporarily waived by the Marquis.

Within a league of the Inca capital a pitched battle was fought between the forces of Hernando Pizarro, seconded by Pedro de Valdivia, on the one side, and old Almagro—carried on a litter, too infirm to mount a horse—on the other. Almagro was utterly routed, and charges having been drawn up against him, he was sentenced to death, and strangled in prison, by order of Hernando.

The Marquis Pizarro then arrived at Cuzco in triumph, wearing the ermine robe that had been sent him by Cortes, the conqueror of Mexico. He was now able to devote his attention to the settlement of the country. Expeditions were despatched in all directions, order was established, the mining industry was developed, and possession taken by the Pizarros of the great alluvial gold deposits, worked by the Incas to the east of the Cordillera. Gonzalo Pizarro made a toilsome expedition to the east of Quito, and then it was that the course of the great river Amazon, by Orellana, was discovered in 1541. Hernando Pizarro returned to Spain, but was imprisoned for the execution of Almagro.

But soon the eventful life of Pizarro closed in. Malcontents, under Juan de la Rada, ruined adherents to the faction of Almagro, and known as "the men of

Chile," conspired to murder him. His house was invaded on 26th June 1541, the slender defence of one or two retainers—the others fled at the approach of the assassins—overcome; his own heroic resistance, in which he slew two of the bandits, soon overpowered, and receiving a mortal wound in the throat, the aged warrior fell to the floor, and making the sign of the cross, expired.

So ended a most remarkable career. An individual of low rank of life, uneducated, Pizarro raised himself by his qualities of bravery, resource, and constancy. His nature was elevated by the ambitious and romantic aspiration for the conquest of a great empire—which he accomplished. On the other hand, he sacrificed his honour for the sake of expediency, in the murder of Atahualpa. But his last years were devoted to the praiseworthy work of the settling and administration of the country, and all the acts of his Spanish associates and subordinates it were not just to lay altogether to his account. He, as a Spaniard of his time, seemed bound to carry out the Spanish traditional policy—that of endeavouring to destroy any civilisation with which it came in contact and of arbitrarily implanting its own.

CHAPTER V

HISTORY—THE COLONIAL PERIOD

1542-1816

Uprising against Royalists—First viceroy—Gonzalo Pizarro—Rebellion—Gasca—Death of Gonzalo—Second viceroy—Rebellion of Giron—Viceroy Mendoza—The Incas—Huancavelica mines—Toledo—Spanish barbarities against the Incas—Religious oppression—Drake—Hawkins—Mining—Products—Viceroys—Jesuits—First university—Inquisition—Predatory expeditions from Europe—Quinine discovered—Abuse of the Indians—Treaty of Utrecht—Earthquake—Rebellion of Indians—Spanish atrocities—Scientific advancement—Seed of independence—Inquisition abolished—Decline of Spain—First battle for Independence—Defeat of the patriots.

PREVIOUS to the death of Pizarro, a Spanish licentiate—Cristobal Vaca de Castro—had been appointed from Spain to investigate the state of affairs consequent upon the execution of Almagro. He was to be only a royal judge, but in the event of the marquis not being alive on his arrival, was to become governor. Arriving in Peru after suffering shipwreck, and hardships consequent thereon, he received tidings of the death of Pizarro. Offers of loyal service to the royal authority were received, but he was obliged to head his army against the forces which had nominated the son of Almagro as Governor of Peru. A battle was fought near Jauja, the Royalist forces numbering seven hundred well-armed men, with the remarkable old veteran, Francisco de Carbajal, as marshal; whilst those surrounding Almagro, led by several of Pizarro's murderers, embraced five hundred well-trained men, supported by the Inca Paullu. The victory was long

doubtful; fifty per cent. of the combatants perished on the field, but at length a brilliant charge, led by the royal judge, decided the day for the Royalists. Young Almagro escaped to Cuzco, but was executed, as were also the murderers of Pizarro. Shortly afterwards Gonzalo Pizarro returned from the region of the Amazon and threatened trouble in his pretensions to succeed to the governorship of Peru as his brother's successor; but he was induced to retire to his possessions without turmoil.

And now the first viceroy of Peru appears upon the scene, Blasco Nuñez Vela, charged with the enforcement of new laws over the Colonists. He arrived at Tumbez on 4th March 1543, and sent orders to Castro to give up charge of the Government and await him in Lima, entering that city in pomp, notwithstanding the murmur of discontent at the action of Spain, which had preceded him. A large portion of the Colonists, with Gonzalo Pizarro at their head, formed a revolution, establishing headquarters at Cuzco. At this juncture, the "Royal Audience"—a court of justice nominated from Spain, with the viceroy as its president, and consisting of four judges—arrived in Lima. Disagreements immediately arose between this body and the viceroy, however, and the latter, incapable of dealing with the situation, was put under restraint. Cepeda, the senior judge of the Royal Audience, then took control, and shortly, Gonzalo Pizarro was recognised as Governor of Peru, and made a triumphal entry into Lima in October 1544, preceded by the royal standard. Nuñez, the harsh and incapable, though brave and loyal viceroy, who had been embarked on a ship for Panama, landed at Tumbez and advanced to Quito, where he was joined by various adherents, and organised a force of five hundred men. Gonzalo Pizarro and Carbajal followed close upon him; a battle was fought on the 18th June 1546; the viceroy was killed; two judges of the Royal Audience fought on opposite sides, and the rebellion was triumphant.

Under the brief government of Gonzalo Pizarro some revival of agriculture took place, and development of gold

and silver-mining. Carbajal and Cepeda advised him that independence should be proclaimed, and that he should be made King of Peru. Consternation reigned in Spain at these events—that rich country which had hitherto sent forth a stream of treasure was in rebellion, and would no longer give, but would rather entail expenditure. The rebels must be crushed.

Philip, Viceroy of Spain for his father the Emperor, characteristically thought it desirable to send as a pacificator to these vast new possessions of the Spanish empire, which was then in its zenith, an astute ecclesiastic rather than a soldier. Pitiless cruelty and cunning, and an ugly and deformed body, were conjoined in Pedro de la Gasca, who sailed for Peru on 26th May 1546. A letter was sent to Gonzalo Pizarro by the Emperor, seeming to grant forgiveness, but ordering him to submit to the authority of the inquisitor. But the governor, in the enjoyment of his power, did not so easily submit. Gasca landed at Tumbes; Gonzalo had retired to Arequipa. Loyal troops under Centeno—a famous and indefatigable veteran who had taken much part in the turmoil of rulers of Peru—engaged him near Lake Titicaca, but the victory of Gonzalo, seconded by Carbajal, was complete.

Gasca marched towards Cuzco, and was joined by Valdivia from Chile, and the Inca Paullu. The Apurimac was crossed, and the royal army reached the plains of Sacsahuana at Cuzco. Desertion and disorganisation followed in the ranks of Gonzalo's army, and Gonzalo rode across the plain and surrendered. A court-martial was held, and Gonzalo, Carbajal, and all their captains sentenced to death. Gonzalo, a fine type of man, magnificently dressed, having passed some time with a confessor, came forth from his tent, and was beheaded. Entering Cuzco, Gasca committed various barbarities upon prisoners and Colonists, and, sated with blood, returned to Lima. In January 1550 this useless and cruel president—as he was termed—sailed for Panama, leaving confusion behind him, and the Government in the hands of the Royal Audience. With Gasca there had come to Peru the

lawyer and statesman, Polo de Ondegardo, who drew up valuable historical documents upon the Incas and their customs.

The second viceroy was Antonio de Mendoza, from Mexico, a man of rank and experience. He carried out the royal order prohibiting enforced labour among the natives, for the book written by the good Bishop las Casas in 1538 had aroused the Spanish emperor to the necessity for fair treatment of the Peruvians. Mendoza was known as "the good viceroy," but he died at Lima in July 1552.

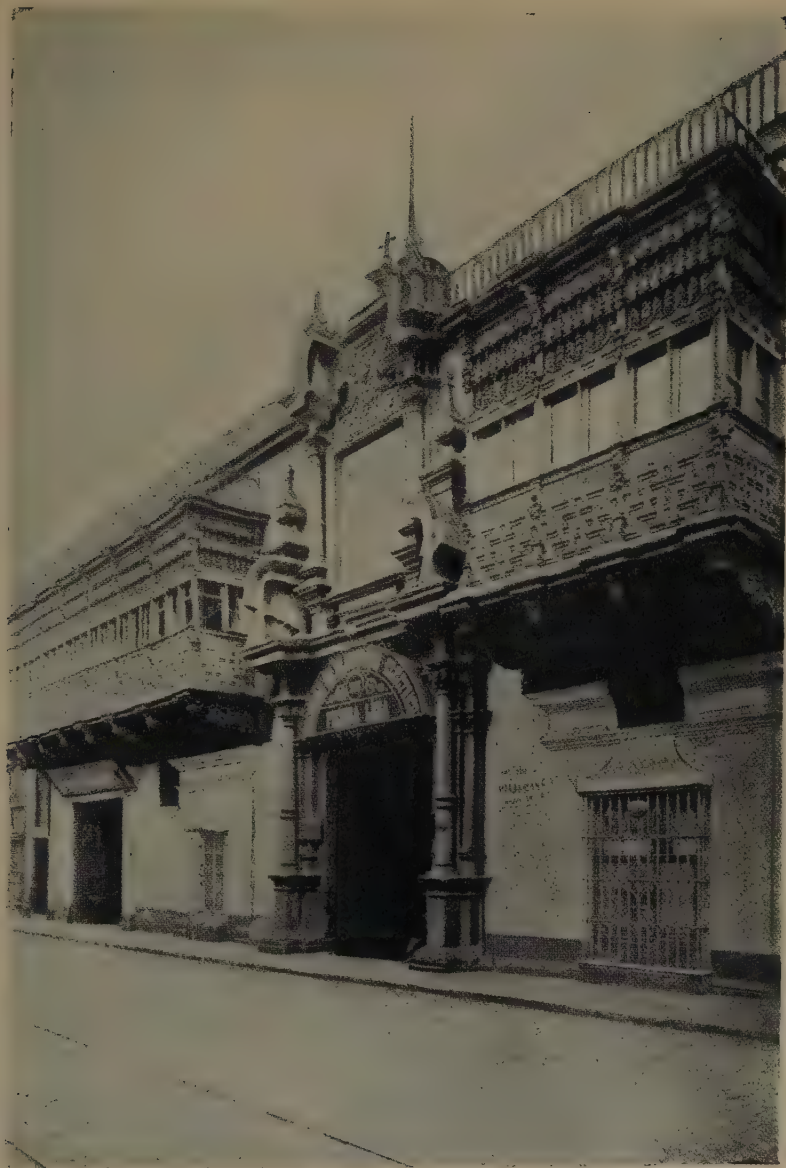
Discontent then became rife over the whole country, due to various royal orders. A rebellion broke out, headed by Francisco Giron, at Cuzco. At Lima the Royal Audience disputed as to who should command the army to suppress it, but the force was at length headed by Archbishop Loaysa. Giron crossed the Andes to Lurin, near Lima, but Alvarado, with Royalist forces, marched on Cuzco. Giron returned over the Cordillera, and a battle was fought, in which Giron was triumphant. The judges of the Royal Audience, who had marched from Lima with their army, blockaded Giron at Pucará, in the Titicaca basin. There was a skirmish, the troops of Giron fell away, and he resolved on flight, leaving his loving wife, Doña Mencia Almaraz, in charge of a friar. There was a heartrending farewell; the fugitive was captured, imprisoned, sentenced to death, executed, and his head nailed on a board in the great *plaza* of Lima, to accompany those of Gonzalo Pizarro and Francisco Carbajal. The broken-hearted wife found no consolation or surcease of sorrow whilst the head of her loved one lay bare to the rotting mists and birds of prey during ten long years, until, in the dead of night, the heads were secretly taken down, and buried in the cloister of a convent. Such were the scenes following upon the Conquest; such the circumstances attending the establishment of Spanish civilisation in the land of the Incas.

But a period of respite was at hand. The Spanish Government, which had so far attempted to govern Peru by means of lawyers and inquisitors, with lamentable results, now appointed to the onerous duty a nobleman of high

rank, Don Andrés Hurtado de Mendoza, Marquis of Cañete. A man of experience, he studied the situation intelligently; investigated the conduct of the judges of the Royal Audience, and made a report upon the method which he advised should be adopted. There were, he found, some eight thousand Spaniards in Peru at this time—May 1555—of which about five hundred had grants of land and Indians, others official employment; whilst a large proportion preferred to live in idleness. Some he proposed to expel, others were employed on expeditions to remote regions, and he advised that no more Spaniards should enter the country save for good reason, so reducing the proportion of adventurers and bad characters somewhat. This policy was approved by the emperor. A viceregal court was then established, a palace and bodyguard, and social life throughout the country began to be organised on a better footing. Now it was that the expedition of Pedro de Ursua was sent forth, to follow the route of Orellana, down the Huallaga and Amazon, to its mouth.

The viceroy took steps also to conciliate the native population. Some of the sons of the Inca Manco still retained a small court in the fastnesses of Vilcabamba. Sayri Tupac was the representative of these unfortunate people, but he renounced his sovereignty in return for a pension and possession of the Yucay valley—he could hardly have followed any other course. But the Inca fell into a deep melancholy and died after a short period. There was at this time a certain population of half-castes growing up—the future basis of Peruvian nationality—offspring of Inca princesses and Spanish knights, as well as of Indian women and Spaniards generally. Among the former class was Garcilasso de la Vega, afterwards the famous historian of the Incas.

The rule of the Marquis of Cañete, strong and severe, drew to its close. Ingratitude from Spain hastened it for Philip II. was influenced by the tales of banished Spaniards, and sent out a successor—Zuñiga, Count of Nieva—before whose arrival, however, the viceroy died in Lima, March 1561.



LIMA : OLD HOUSE OF A VICEROY.

To face p. 58.

The rule of this successor was brief—he was assassinated as a result of an amorous intrigue, and was succeeded by Castro, a lawyer, who ruled for five years. It was at this period that the wonderful quicksilver mines of Huancavelica¹ were first worked—those remarkable deposits of mercury which gave up their great wealth to Spain, and rendered possible the treatment of gold and silver ores in South America and Mexico for several centuries. Castro was followed by Toledo, who ruled the country for thirteen years—the fifth viceroy. He was a most prolific law-maker, and his rule was an eventful one for Peru.

During this period the Incas were systematically oppressed, and the young Tupac Amaru and his followers goaded into resistance as a pretext for his execution. The poor boy, innocent of intrigue himself, was led forth to slaughter in the great *plaza* of Cuzco, and a wail of horror and execration so deep and bitter went up from the Indians, packed in the square, that for a moment the executioners stayed their hands. But the cruel and inexorable Toledo angrily ordered the knife to fall immediately, and the head to be stuck upon a pike in the *plaza*. At night, Spaniards looking forth from their windows beheld a strange scene in the moonlight. The *plaza* was covered with a concourse of kneeling, silent Indians, gazing towards the head of the fallen Inca! All kinds of barbarities were committed by Toledo's orders against the remaining Incas and half-caste Incas, with the intention of crushing out their national spirit—a policy in accordance with the traditions of Spain. And it was successful. For two centuries the melancholy Indians of Peru submitted to their fate, and the stamp of those times is imprinted upon them even to-day, as the traveller in the Andes will observe. Also, religious oppression took form, and between the *curas*, or village priests, and the laws of the viceroy, the people were ground in a mill which began to tend towards their rapid diminution. It is a sad picture, the ruination of that harmless and docile race of the Andine uplands.

¹ Visited by the author and described in the *Geographical Journal*

But the arm of Spain received at this period some well-merited punishment. It was the time of Drake. An English keel was in the Pacific, and a stream of freebooters from 1577 onwards harassed the towns of the west coast of Peru and Chile, a period leading up to that crushing blow to the mother-country of the loss of the Armada. Toledo returned to Spain, was upbraided—it is pleasing to recall—for his execution of the Inca, and he died in September 1584.

Then came various other rulers—Enriquez, who worked with zeal for the betterment of the country, and during whose administration a terrific earthquake destroyed Arequipa. A three-year interval from his death, and Portugal arrived; an old and incapable man, during whose time pestilence, famine, and earthquakes troubled the country. It was at this period that the disaster to the Armada took place. Following this came a son of the former viceroy, the Marquis of Cañete, and due to his exertions it was that Sir Richard Hawkins, who arrived on the coast in 1594, was captured. Unceasing demands were made from Spain for money, and excessive tributes were demanded from the Indians and Colonists, resulting in an insurrection at Quito. The silver mines were worked strenuously, as also the quicksilver deposits. Cañete finally begged to be relieved of his office, infirm as he was, and he returned to Spain, to be treated with ingratitude; whilst a former viceroy of Mexico, Don Luis de Velasco, was sent to Lima.

This period is marked by the death of Philip II. of Spain (1598). There had been a continual drain of Peruvian and Mexican treasure and resources to enable the mother-country to continue the extraordinary home and foreign policy which had ruined her, a policy which had had its pernicious effects upon her colonies. Some matters of use to mankind had, however, accompanied this troubled imperial commerce. Both old and new worlds had received invaluable gifts from nature's storehouse. Among these were potatoes, chocolate, maize, tobacco, ipecacuanha, quinine, and other products of the regions of the Andes

and the Amazon, which were brought into Europe, whilst the equine race — unknown before the Spanish advent—had been introduced into South America. Cattle and sheep, as also pigs and fowls, were other gifts of Europe to Peru, and the *llama* and its varieties ceased to be the only four-footed beast in the service of man in those great regions. Wheat, barley, oats, lucerne, olives, grape-vines, sugar-cane, were also brought in by the Spaniards; and, indeed, it may be said that these products of nature were the main benefits that accrued to the inhabitants of Peru from the conquest of the Spaniards.

From the end of the sixteenth century until the early part of the nineteenth, when the rule of Spain was thrown off, Peru was governed by successive viceroys. The total number of these, including those who bore only the title of governor, and dating from Pizarro, was forty-four. The Council of the Indies was instituted by Ferdinand V. in 1511, and existed until the disruption of the Spanish empire.

The vice-regency of Peru became the most important in Spanish America, more so than that of Mexico, and Lima was practically the capital of Spain's dominions in South America. The Jesuits arrived in 1567. They introduced printing, and among them were authors, historians, and teachers. They established churches and colleges, and acquired considerable wealth. In 1551 the first university in the New World was founded; that of San Marcos, at Lima. The education of the people was kept at this period in the hands of the priests, and was in general accord with the methods of the Inquisition, whose mission was the destroying of all freedom of thought. In 1573 the first *auto de fe* took place, and from that period the benumbing and desolating ecclesiastical dominion continued throughout the following centuries of Spanish rule. As to the viceroys, some of them were animated by good intentions, but these were of little avail against the resistance of the Church, and the constant drain of money to the mother-country. Prince Esquilache, viceroy in 1615 - 1621, by enforced

labour among the Indians in the mines, was able to transmit a million *ducats* annually to Spain. The great Potosi mine was worked at this time, and became the theatre of much lawlessness. The Marquis of Guadalcazar, who succeeded Esquilache, had to defend Peru against the predatory Dutch and British expeditions which strove to take toll of coast towns and plate-ships. These expeditions were largely a result of the monopoly of commerce which Spain strove to maintain in those regions, and which the maritime nations of Europe disputed. Guadalcazar discouraged religious persecution, it is to be remembered to his credit. He was succeeded in 1628 by the Count of Chinchon, at which time the poverty of Spain rendered more imperative than ever the demand for funds from the colonies. The wife of this viceroy fell ill of a tertian fever, and was cured by doses of Peruvian bark—quinine—which was afterwards termed *chinchona*. This valuable drug was, therefore, given by Peru to the world at this period.

In 1632 an outbreak of Indians on Lake Titicaca took place, a sort of naval fight on their curious *balsas*, or rafts, resulting. The third navigation of the river Amazon was undertaken at the same time; some monks, leaving Quito, descending the river Napo to its confluence with the Amazon, and following that mighty stream, reached Pará, at its mouth.

Some scientific advancement was made in Peru under Alba, a former viceroy of Mexico, and the beginning of a navy. At this time the intolerable condition of the Indians had reached a point which attracted notice. These unfortunate people were exploited in every conceivable sense; the exactions and abuses directed against them coming equally from priest as from layman. In 1664 some alleviation of their lot was brought about by regulations promulgated by the viceroy, Santistevan. The monopoly of Spanish commerce on the west coast began to be destroyed, both British and French traders acquiring trade rights by the signing of the Treaty of Utrecht in 1713; and this marked a period in which aver-



[Photo]

LAKE TITICACA : INDIAN RAFTS.

(Showing also some *Andenes*.)

[N. P. Edwards.

To face p. 62.

sion to Spanish rule and methods among the colonists became deepened. Certain conciliatory measures, such as the giving of titles of nobility to various prominent colonists by the viceroys Antonio Manso and Manuel Amat, were initiated; but it was too late to arouse any spirit of friendship for the Bourbon dynasty or for Spain.

In 1746 an appalling earthquake destroyed Lima, whilst a tidal wave swept away the port of Callao. In 1776 the continued exactions against the long-suffering people, in the form of taxes and restrictions, began to bear some natural effect, and some insurrection broke out, notwithstanding which, the Council of the Indies continued their ceaseless demands upon the colonists. It was seen, however, that the territory governed from the viceroyalty of Peru, at Lima, was too large for practicable supervision. New Granada, with a capital at Bogota, had already been separated, and in 1776 Buenos Ayres was also made the seat of a viceroy, including the territory now belonging to Bolivia.

The crushing abuse of the Indians by forced labour in mines and factories had seriously diminished the populations of the provinces surrounding the principal mining and agricultural regions. The people were at such a stage that death seemed preferable to their condition; and when a leader arose in the person of Tupac Amaru, a descendant of the Incas who had remained in the valley of Vilcamayo since the murder of their leader by Toledo, they broke out into rebellion, and the whole of the interior of Peru was quickly aflame. Various battles were fought, and successes gained by the people; all excepting the whites declaring common cause. But, unfortunately, the insurrection failed at length, and Tupac was executed with the most savage brutality at Cuzco, in May 1781. His wife and others of his followers were similarly treated, and the revolting horrors which were practised on this occasion by the Spanish judges and authorities — only somewhat over a century ago — are such as the reader may well be spared.¹ But by these

¹ For an account of these atrocities see Markham's "History of Peru."

acts Spain was working towards her own doom in South America.

Some reforms were made in the treatment of the Indians after the events above described, and some considerable scientific, geographical, and literary advance gained under the viceroys Jauregui, De la Croix, Taboada and others, including Don Francisco Gil—the latter the most enlightened of the whole succession of Peruvian rulers—during the years 1780 to 1790. The coast was partly surveyed, a nautical school established, newspaper printed, statistics compiled, maps and surveys made, botanical studies of the *flora* carried out—all those matters which, theoretically, the Spaniards are enthusiastic about, but which they have, in practice, generally left other nations to do. The next viceroy was O'Higgins, born a poor Irish boy, and whose career forms an interesting chapter in the history of his adopted country.

At the close of the eighteenth and beginning of the nineteenth century, commences the growth of liberal and revolutionary ideas in Peru. These were first nourished in the centres of learning of Lima and Arequipa, until the nobility, and even the ladies of Lima, were imbued with the awakening spirit. Secret clubs began to meet, arrests followed, and a popular movement began to assume form. On September 1813, when news of the abolition of the Inquisition in Spain was received in Lima, there was an outbreak, and the Holy Office, its archives, prisons and instruments of torture, were destroyed amid general rejoicing.

The decrepitude of Spain was revealed to the colonists of South America by the invasion of Napoleon, and they did not long delay in organising native administrations. Caracas on 19th April 1810, Chile on 18th September 1810, and Buenos Ayres in 1813, showed by their declarations that the inevitable was happening; and in Simon Bolivar, the hour produced the man.

Peru remained for a while loyal to the crown of Spain, but the cry of independence was raised at Cuzco in August 1814 by a number of prominent Peruvians, some of whom were men of good birth, and feeling became

unanimous for throwing off the Spanish yoke. Against their banded forces marched General Ramirez, but the patriots retreated over the snowy Cordillera from Arequipa. Ramirez received a letter from Pumacagua, the aged leader of the Peruvians, asking him for whom he was fighting, seeing that Ferdinand VII. of Spain had been sold to the French. Ramirez, however, with a force of thirteen hundred well-disciplined men, armed with muskets, would waste no words with them, and Pumacagua, disposing only of eight hundred soldiers and unarmed Indians, stood up for battle. The Peruvians were routed, the guns captured, and large numbers killed, whilst as to the Indians, the Spaniards barbarously cut off their ears and sent them away among their people to tell the tale. Other operations took place both by land and sea, a Spanish squadron being defeated in May 1814 by Captain William Brown, a British seaman commanding revolutionary vessels from the Argentine. An organised rising was planned at Lima, but was frustrated by the arrival of veteran troops from Spain. Bolivia and Chile had been reconquered, Peru was brought under subjection; Buenos Ayres alone remained in freedom. It seemed that Spanish power was to be triumphant; and in July 1816 Pezuela entered Lima as Viceroy. It was but a lull before the culminating tempest which should clear the rule of Spain away before it, for events were but leading on to the historic days of Junin and Ayacucho.

CHAPTER VI

HISTORY—THE REPUBLIC

1817-1879

San Martin—Passage of the Andes—Cochrane—Spanish squadron at Callao—Independence established—First president—Bolívar—Second president—Battle of Ayacucho—Final defeat of Royalists—War with Bolivia and Colombia—Internal disturbances—Salaverry—War with Bolivia—Death of Salaverry—Santa Cruz—Guano and nitrate—First Chilean invasion—Castilla—War with Spain—Great public works—President Balta—Gutierrez—President Pardo—Chilean war.

PERU was not destined to obtain her independence by her own efforts; the agency of her liberation appeared from the outside, embodied in the famous Paraguayan José San Martín, whose name even to-day evokes enthusiasm in Lima.

San Martín, a son of the Governor of Paraguay, educated in Spain and with friendships in England, entered the Spanish army, but left for Buenos Ayres to take part in the liberation of his country. He was appointed to a post by the Argentine Government, and when the Chileans called for help from Argentina, San Martín organised an army of more than four thousand men, and with his artillery and supplies, made one of the most remarkable marches in military history, crossing the Andes into Chile. It is to be recollected that the passes over the vast Cordilleras which separate Argentina from Chile and Peru have to be traversed at high elevations above sea-level, that terrific snowstorms are encountered, and that the *soroche*, or mountain sickness, of those inclement regions debilitates the inhabitant of the lowlands who

ventures thither over the difficult trails which surmount the great chain.

In February 1817 San Martin entered the Chilian capital, Santiago, and the annihilation of Spanish power there followed. A navy was organised for the liberation of Peru, and arrived off Callao in February 1819, under the command of Lord Cochrane, an English naval officer in the Chilian service. Some desultory operations were carried out against the forts, but this was a preliminary expedition, and the squadron returned twice to Valparaiso, where, taking on board further soldiers, it returned in August 1820 to the Peruvian port of Pisco, south of Callao, and landed San Martin's expedition. Cochrane proceeded to Callao, and engaged and captured the Spanish cruiser *Esmeralda*.

Various Spanish detachments had been defeated by San Martin and his officers, and a body of the Royalist troops came over to the patriots' side. Pezuela, the viceroy, had long before reported to Spain that Peru was a volcano of discontent, ready for eruption. In January 1821 he was deposed, largely on account of his inaction, by the chief Royalist generals, and when he returned to Spain, the mother-country sent emissaries to confer with the Peruvians, and form a compromise. San Martin proposed the independence of the country and the appointment of a Bourbon prince to rule over Peru. However, the independence of Peru was proclaimed on 28th July 1821, and San Martin was made Protector.

This patriotic and remarkable man, who had accomplished so much through his genius and zeal, did not mar his record by dangerous or selfish ambition. He took farewell of the Peruvians on the advent of Bolivar, who having liberated Venezuela, desired to complete the liberation of Peru. San Martin left Peru an established national representation, with a congress as its sovereign power.

And now the first ruler of a new republic takes his place in the troubled history of Peru. Don José de la Riva Agüero took the oath and donned the presidential

scarf of red and white on 28th February 1823. Energetic and able, Riva Agüero organised the army, increased the small navy, raised loans, and put the country on a footing such as rendered its position proof against its recovery by Spain.

La Serna, who had been declared viceroy by the Spanish generals at the time of the deposition of Pezuela, had established headquarters at Cuzco, and he now took the field against Santa Cruz, chief of the army of the Republic, which was defeated near Lake Titicaca. Part of the Royalist forces under Canterac menaced Lima, which was abandoned by the patriots. General Sucre, an emissary of Bolivar from Colombia, arrived in Lima with a force of Colombians, and was elected commander of the Peruvian army. He secretly intrigued against Riva Agüero in order to prepare the way for Bolivar, and in June 1823 Peru's first president was unlawfully deposed. Riva Agüero was a distinguished Peruvian, and the machinations of Bolivar did not at first benefit the country.

Bolivar became absolute dictator in 1824, and with Sucre, the Colombian, and the combined forces of Peruvian and Colombian soldiers, he defended the independence of the country against the Royalist forces. A battle was fought near Junin, and Canterac — Royalist leader — was defeated. Advance was then made by Bolivar on Cuzco, the last stronghold of Spanish power in South America, where La Serna waited with twelve thousand men. After marchings and counter-marchings among the steep and broken country of the inter-Andine region beyond Cuzco, the historic battle of Ayacucho was fought. The patriots numbered nigh six thousand, consisting of Colombians, Peruvians, and a few Argentines; the Royalists counted somewhat more than nine thousand. The victory fell completely to the lot of the patriots. The Royalists were utterly routed; nearly fifteen hundred were slain; the viceroy, his generals, officers and army captured. The news spread rapidly all over Peru. It was hailed as freedom and a new life, after the three centuries of Spanish domination.

Thus Spanish rule in Peru—and, indeed, in South America—came to an end. The good and the bad qualities of the Iberian character were indelibly stamped upon the peoples of the Andes and the Pacific Coast for all time. If in the perusal of its history features of oppression and intolerance seem to stand strongly out, the fact will not be lost sight of that a great civilisation was established, whose future may develop much which it is yet too early to forecast.

Bolivar made a triumphal tour of the country, and was received as its deliverer. Upper Peru was established as a separate country, named after Bolivar, with Sucre as its president, and Chuquisaca as its capital, in October 1826.

From 1822, the date of the Peruvian Congress which had elected the first president, onwards for some forty or more years, continued internal disturbance prevented the development and prosperity of Peru. Bolivar, at length returned to Colombia, and Peru declared against the Constitution he had wrought. The next president—Lamar, August 1827—in conjunction with Gamarra, one of the generals who had fought at Ayacucho, by their demands against Bolivia, and desire to annex Guayaquil, involved the country in war with Bolivar and Colombia. They were defeated by Sucre: Gamarra rose against Lamar, who was banished, and Gamarra was declared a provisional President.

Various internal disturbances took place during this administration; various laws were enacted and revision of the Constitution made. The ship of State in the republican sea may now be considered to have been launched, and it did not fail to enter upon troubled waters. Gamarra's term drew to its close, and the illegal nomination of two successors—Orbegoso and Bermudez—by their respective partisans, brought on the inevitable revolution; and the new votaries of liberty in Lima and Peru expended their energy for a brief season in shedding each other's blood. In justice, however, to the Peruvians it must be recorded that a reconciliation took place on the eve of a battle, and Orbegoso

resumed the direction of affairs. Prominent in these events had been Miller, the famous general; Echenique and Salaverry, both of which latter afterwards were presidents of Peru. Other disturbances arose, induced by Salaverry; this audacious and remarkable man, ousting Gamarra, proclaimed himself chief of Peru, and galloped into Lima as its master on 25th February 1835.

Following close upon these events came a war with Bolivia, the president of that country, Santa Cruz, taking the field against Salaverry. The operations took place principally in the neighbourhood of Cuzco and Arequipa, but Lima fell a prey to anarchy during the absence of the president in the interior. In this campaign Santa Cruz and the Bolivians triumphed, and Salaverry and his officers were barbarously shot in the *plaza* of Arequipa, in February 1836. Santa Cruz entered Lima as Protector, and continued the administration of the confederation of Peru and Bolivia, the formation of which had been the object of his campaign.

But soon, from the south, loomed up the beginning of a trouble which should be fateful for Peru. The guano and nitrate, which nature had disposed upon the shores and interiors respectively of the appalling deserts of Atacáma and Tarapacá, were its basis. These deserts are part of that vast region, the long strip of sterile, rainless territory between the Cordillera of the Andes and the Pacific Coast of South America. Bare of vegetation, these great zones of territory had been generally considered of little value. In 1840, urged by the demand for guano as a fertiliser, a Chilean expedition discovered this substance on the sea-board of Atacáma, and following on this a dispute arose between Chile and Bolivia for the possession of the territory.

The Peru - Bolivian Confederation had recognised previously that Chile, with its oligarchical government at that period, was their enemy, and a force to be reckoned with. Upon various pretexts Chile declared war with Peru in November 1836, but previous to the declaration a Chilean officer seized a Peruvian fleet of

three vessels, which was lying unmanned in the harbour of Callao. In September 1837, the Chilian general Blanco Encalada was despatched from Valparaiso with eight men-of-war and twenty transports, and landing at Islay, near Mollendo, with some three thousand five hundred troops, advanced thence upon Arequipa. But this expedition was cut off and defeated by General Cerdeña, with six thousand men of the protecting army, after which a treaty of peace and commerce was signed, and Blanco Encalada returned to Chile.

But the Chilians refused to abide by this treaty, and an expedition of six thousand men was organised, including numerous Peruvian refugees who had been banished from Lima by Santa Cruz. Among these were Castilla, Gamarra, and others. Punishment was soon to fall upon Santa Cruz and the Confederation for the political murders perpetrated at Arequipa, and the death of Salaverry. A strong party was formed against them, headed by Orbegoso; a party which in other circumstances would have rallied against the invaders. The Chilian force landed at Ancon, and marched upon Lima, led by Castilla, Gamarra, and La Fuente. An action was fought; Orbegoso was defeated, and Gamarra named provisional President. But the invading allies retreated before Santa Cruz, who entered Lima in November 1838; and at the beginning of the following year the invaders were pursued, and a battle was fought at Yungay, a town in the Huaylas valley, where, however, the troops of the Confederation were utterly routed. Santa Cruz escaped on board a British ship to Guayaquil, and many of the principal men of Peru were banished, as being supporters of the Confederation. Among these was the famous Miller, as well as Orbegoso and others.

The battle of Yungay dissolved the Confederation, and the Chilians departed. Gamarra entered Lima as provisional President, and an elaborated Constitution was promulgated at Huancayo in November 1839, and Gamarra declared Chief, with the title of "Restorer."

Then follows the revolution of Vivanco, against

Gamarra; and Vivanco became "Regenerator" in January 1841. But opposed by General Castilla, chief in command of the Government forces, he was ousted after three months' time. Santa Cruz, the warlike mischief-maker, had, meanwhile, been conducting intrigues in Bolivia, from Guayaquil, during this time, with the hope of recovering his former power. War was made on Bolivia with the sanction of the Peruvian Council of State, and some successes gained; but a final disaster brought defeat to Gamarra and the Peruvian forces in November 1841, in which Gamarra perished. Peace was, however, diplomatically arranged.

For a period the contentions of various generals, leaders, and others, among them the "Regenerator" Vivanco, caused civil war to prevail over the country, whose only hope was in the advent of some strong man who should bring political affairs again to a state of order. The republic had passed through some twenty years of existence, and whilst experience was being gained, grave defects were apparent in the character of the governing race, which had kept the development of the country back. The needful strong man appeared in the person of Ramon Castilla.

Castilla was born in the little town of Tarapacá, and had lived quite an eventful life even before the time at which he fell into Bolivian captivity, after the fall of Gamarra. On being released he entered upon a series of audacious operations with the object of restoring peace and security, and was successfully elected President of Peru in April 1845, by the Tenth Peruvian Congress. Six years of peace and prosperity followed. The nitrate and guano industries formed important sources of revenue; public works were undertaken; loans raised in London, and naval and military expenditure increased. Unfortunately, however, financial extravagance became rife, and corruption ensued.

In 1847 the question of rights in Atacáma again threatened relations between Chile and Bolivia, and this matter remained a source of trouble from this time onwards.

During this period Echenique had succeeded Castilla as president, and profligate manipulation and corruption of public revenue became rampant. After ten years of peace, Castilla reluctantly protested and was elected President again in July 1855. Shortly afterwards internal trouble once more appeared, and Arequipa was the scene of an insurrection by partisans of Vivanco, which, however, was insignificant, save that it involved the mutiny of the fleet. Peace was restored in 1858, and a further term of order followed; the result of the administration by Castilla's good methods.

In October 1864 diplomatic relations between Chile and Bolivia were severed over the Atacáma question, and a war was only prevented by the sudden outbreak of hostilities between Peru and Spain. For the latter country sent an expedition—ostensibly scientific—to the Pacific under Admiral Pinzon, with two frigates, and acts were committed which evinced a desire to recover possession of her old colonies on the part of Spain. In view of the menace to their independence, Bolivia and Chile forebore their own quarrel and entered into an agreement upon the question at issue, stipulating boundaries and rights. The President of Peru, Pezet, had temporised with Spain; but the Spanish admiral picked a quarrel with Chile, and war was declared. A conflict took place, in which the Chilians captured the Spanish gunboat, *Covadonga*. Discontent ruled in Peru with Pezet's actions, and he was succeeded by Prado, when an offensive and defensive treaty was entered into with Chile.

Both countries put themselves in postures of defence against the strong Spanish navy, which bombarded Valparaíso, and then attacked Callao and the combined fleet. There were heavy losses on both sides. The Chilians eulogised the bravery of the Peruvians, and the city of Santiago presented Prado with a sword; later, the Spanish ships abandoned further hostilities and returned to Spain, and through the good offices of the United States a truce was entered into, leading up to a treaty of peace.

Following upon the Spanish attempt was the insurrection against Prado, begun by Castilla, and completed by Colonel José Balta, who then became president. During this administration great public works were carried out, which, however, enormously increased the national debt. The total foreign loans grew to forty-nine million pounds. A number of railway lines were built, running from coast ports towards the interior, including part of the famous Oroya railway, and that from Mollendo to Arequipa—both trans-Andean lines. The whole railway scheme was to cost thirty-seven and a half million pounds. In addition, port works and waterworks were undertaken, roads into the Montaña, or Upper Amazonian forests begun, and some steamers placed upon the great affluents of the Amazon, the wonderful natural system of waterways with which the Peruvian Orient is endowed. This progressive, if wasteful term, was closed by the murder of the president Balta.

The murder of Balta and the incidents following thereon serve to show the spirit of ferocity which enters at times into the political strife of the Spanish-American people. It was suspected that Balta intended to retain the presidency forcibly and illegally, and Manuel Pardo having been elected his successor, a revolution was started against both by the Minister of War, Gutierrez, who, with the aid of a body of armed men, seized and murdered the President. This ruffian proclaimed himself Dictator supported by his three brothers, also military men, without, however, any following. Within five days Gutierrez and two of his brothers were murdered by an infuriated mob in the streets of Lima; their naked bodies were hung at the top of the cathedral tower, flung thence to the ground, and, in company with the body of the other brother, which had been buried and dug up, burnt to ashes in the *plaza* before the assembled multitude.

Manuel Pardo was the next president. He was the first civilian to become such, and one of the best rulers Peru has ever had. He found the country nigh to bankruptcy, due to the preceding reckless expenditure, upon which a sum of two and a half million pounds annually was



PART OF THE OROYA RAILWAY.

required to meet the interest. The payment of this interest ceased in 1876. A State monopoly of the Tarapacá nitrate deposits was established, and other measures were taken to increase revenue. The home policy of Pardo was good, but his foreign policy left complications which paved the way to the nitrate trouble later on. Pardo's term of office began in 1872, and was duly completed, but he, too, was foully assassinated in 1878.

Bolivia and Chile had, as stated, entered into an agreement regarding the Atacáma nitrate industries, which had been developed by Chilean enterprise. Peru was, however, accused of intriguing with Bolivia for the imposing of a tax upon the export of this nitrate in order that their own similar industries of Tarapacá might more greatly benefit; and in 1875 an attempt had been made to collect this tax at Antofagasta. A secret treaty had been entered into between Peru and Bolivia regarding the protection of their respective territories against aggressors; and this and other matters were alleged as grievances by Chile against Peru. The Chileans, in view of the enforcement of the nitrate taxes by Bolivia, took possession of the seaport and town of Antofagasta without making a declaration of war. The Bolivian Government declared war, March 1879; the Peruvian representative in Chile offered the services of Peru as mediator, but the Chileans suspected that this was a move against them, as they claimed had been the secret treaty with Bolivia. Peru, on the other hand, considered that the Chileans, covetous of the great riches of Tarapacá, were forming pretexts which might lead to the invasion of that province. Be it as it may, the spirit of both countries was aroused, and Chile declared war against Peru on 5th April 1879.

The war between Peru and Chile, with all that it involved, has been a subject for the most bitter controversy, and up to the present time its resulting questions are unsettled, and the wound it inflicted is unhealed. European and American writers have also taken sides upon the question, some favouring the Peruvian aspect, others the Chilean, according to the trend of their sympathies. The

Peruvian view is that the Chilians had set covetous eyes upon the nitrate of Tarapacá and were resolved to attempt its unrighteous possession; that they had increased their navy with this object; and that the alleged grievance involved in the supposed hostile act of Peru in the secret treaty with Bolivia was but a shallow pretext. Peru declares that she was unprepared for war; that she had no conception that Chile contemplated any such move; and she claimed to be acting within her rights in endeavouring to keep up the price of nitrate by means of the export tax which she influenced Bolivia to impose at Antofagasta. The Chilians, for their part, affirmed that this action involved a breach of faith, in view of the treaty of 1874 between Chile and Bolivia against raising of taxation; that the agreement or treaty of 1873 between Peru and Bolivia was directed against Chile; and that Peru, convinced of the strength of her own sea and land forces, was taking advantage of the threatened hostilities between Argentina and Chile, which might prevent any protest being made by the latter country; and that, in brief, she was seizing the moment as opportune for her unfriendly actions leaving the Chilians no option save that of fighting. The Peruvian representative in Chile, in offering arbitration proposed that Chile should evacuate Antofagasta pending the settlement of the question, a neutral administration to be established under the joint ruling of Chile, Bolivia, and Peru; and that all revenues should be divided between Chile and Bolivia after payment of administration expenses. But whether or not Chile was resolved to fix a quarrel, the fact remains that this arrangement was not to her liking, and the Peruvian minister was handed his passports, and an ultimatum launched by Chile to the effect that Peru should cease defensive preparations, abrogate her treaty with Bolivia, and declare her neutrality. Peru refused — she could hardly have done otherwise — and war was inevitable.



CHARACTER OF COAST TOWNS: CAÑETE.

CHAPTER VII

HISTORY—THE CHILIAN WAR

1879-1880

Sea-power and defence—Peruvian, Chilean and Bolivian relative strength—Navies—Antofagasta occupied—Iquique blockaded—Sea-fights of the *Huascar*—Loss of the *Esmeralda* and *Independencia*—Loss of the *Huascar*—Death of Grau—Fall of Pisagua—Engagement of Agua Santa—Retreat to Tarapacá—Evacuation of Iquique—Battle of Tarapacá—Peruvian victory—Retreat to Arica—Resignation of President Prado—Uprising of Piérola—Battle of Tacna—The Morro of Arica—The *Union*—Battle of Arica—Defeat of the Peruvians—Death of Bolognesi—Conduct of the Chilians.

PERU is a country which has always been so situated that the successful invasion of her territory or its adequate defence is mainly dependent upon one principal element—that of sea-power. The advent of Pizarro, the operations of San Martin and Cochrane, showed this to be true, and the Chilians knew it well. All Peruvian railways run at right angles to the coast; there are no longitudinal means of transport or communication except by sea, and the various regions served by the respective seaports are isolated and separated by vast tracts of desert, often waterless and without resource. Tarapacá and its nitrate were, and even to-day are, so isolated, and subject to capture from the sea-board. Such towns as Iquique and others upon this coast-zone produce absolutely nothing to support life in the form of food-supplies, and are dependent upon the steamers arriving from north and south for even the simplest means of subsistence.

The three nations involved in this question and conflict were not sure of each other's relative strength. Each believed itself capable of holding its own, as their haughty treatment of each other had shown. Nevertheless, at this period it was generally held in South America that Peru was a stronger power than Chile, both by land and sea, and that the latter country would not dare to attack the former, especially in view of Peru's alliance with Bolivia. But it soon became apparent that this view was mistaken, and that Chile was the more powerful, not only in the number, tonnage, and armament of her navy, but in the equipment and stamina—if not the number—of her land forces. For the Chilians had steadily increased their naval resources for a time of emergency, whilst Peru, impoverished by debt and embarrassments left by earlier and often corrupt administrations, had allowed herself to drift, and this now proved fatal to her.

The Chilean navy consisted of the two powerful ironclads *Almirante Cochrane* and *Blanco Encalada*, built at Hull in 1875, and therefore of—then—modern construction, of 3,560 tons, and well armed and protected; two corvettes, the *O'Higgins* and *Chacabuco*; and five other vessels, including the *Esmeralda*, a wooden corvette, and the *Covadonga*, a wooden gunboat which had been captured in 1866 from the Spanish expedition under Admiral Pinzon. All these vessels carried their respective armaments of Armstrong and Nordenfelt guns.

The Peruvians counted upon a far less formidable list of fighting units, and expert comparisons showed that the number of sea-going vessels they possessed, and their aggregate tonnage, was little more than half that of the Chilians, whilst the armaments represented only a similar proportion. The vessels were: the turret-ship *Huascar*, built in Birkenhead in 1866, and of only 1,130 tons, armed with Whitworth and Armstrong guns, with armour-plating incapable of resisting the projectiles of the Chilean ironclads; the *Independencia*, an old-type ironclad, of 2,000 tons, built in 1865 in London; the *Union*, a wooden corvette of 1,150 tons; the *Pilcomayo*, of 600 tons; and two old American-

built monitors, the *Manco-Capac* and *Atahualpa*, only of use as coast-defence vessels, stationed permanently at Arica and Callao respectively.

The Chilians lost no time in taking the offensive. An army corps of six thousand men had already been equipped in view of Bolivia's action, and in February 1879 an expedition had sailed from Valparaiso and taken possession of the Bolivian port of Antofagasta, which, with the other seaports of Cobija and Tocopilla, had been left almost undefended by Bolivia and her ally Peru. An engagement ensued, and the Bolivians were defeated. The Chilians then occupied their time in collecting stores at Antofagasta, which port should serve as a base. When on 5th April war was declared against Peru, the Chilean squadron sailed north, bombarding and destroying Peruvian seaports, most of which were defenceless, among them being Pisagua and Mollendo. Much censure has been cast upon the Chilians for destroying defenceless places in this engagement, their reply being that it was necessary to deprive the Peruvian Government of sources of revenue such as the nitrate-shipping ports afforded.

Iquique, the main port and nitrate centre of the great province of Tarapacá, was now blockaded by the Chilean vessels, the Peruvian ships not having so far appeared off that coast. The Chilean admiral, Rebolledo, then set out to observe the coast towards Callao with the *Blanco Encalada* and *O'Higgins*; the *Esmeralda* and *Covadonga* maintaining the blockade at Iquique.

And then came the memorable engagements of the *Huascar*, the Peruvian ironclad, and its famous Captain Grau, with the Chilians. Whilst the operations at Iquique were taking place, the *Huascar* and *Independencia* had set out, with President Prado, from Callao for Arica, where a Peruvian army was assembling. Grau disembarked the President, and having had news of the blockade of Iquique by the two Chilean vessels, set forth for that port, some 60 miles to the south, arriving there at daybreak. The approach was seen by the *Esmeralda*, and her commander, Captain Prat, signalled the *Covadonga*, and it was decided

to engage, notwithstanding the superiority of the Peruvian ships, for it is to be recollected that these two Chilian units were not ironclads.

The engagement was opened by the *Huascar's* fire upon the *Covadonga*. The positions of the vessels then changed, the *Independencia* endeavouring to ram the *Covadonga*, and the *Huascar* engaging the *Esmeralda*. The latter vessel purposely drew into shoal water, hoping to have her antagonist aground, but, bursting a boiler, she was severely crippled for speed. After continued cannonading at 1,000 yards between the two vessels, a shell set the Chilian on fire and killed a number of men, practically putting her out of action. But she showed no sign of surrender, and Grau, determining to end the struggle, rammed the *Esmeralda* on the port side. Her brave commander, Captain Prat, as the vessels closed, leaped on board with sword and revolver, joined only by a single man, ere the vessels separated again. Prat rushed along the Peruvian deck, refusing surrender, and was shot down after killing a Peruvian officer. The second in command of the *Esmeralda* still refused to strike his flag, and again the *Huascar* rammed, opening the Chilian on the starboard bow. The waters rushed in, the fires were extinguished, the seamen killed at their posts, but again the officer and a sailor bravely leaped upon the *Huascar's* deck, perishing as had their commander. A third time the *Huascar* rammed, and simultaneously discharged her guns into the doomed corvette. She sank, and of her crew of two hundred men, but fifty were saved.

Meantime, the *Covadonga*, pursued by the *Independencia*, fled through shoal water, and the Peruvian in an unguarded moment went ashore on a patch of submerged rocks, and became a total wreck. The *Covadonga* opened fire on the stranded vessel, abandoning her position, however, on the approach of the *Huascar*.

The loss of the *Independencia* was a terrible blow to the Peruvian navy, for the Chilian ships were now rendered doubly overwhelming in number and weight. But the *Huascar* returned to Callao, exchanging shots on the way

with the formidable *Blanco Encalada*—a foretaste of what should follow.

For months Grau harassed the enemy, avoiding engagements by his clever manœuvring, and, indeed, adding to the Peruvian navy by the capture of the Chilian vessel *Rimac*, a large transport armed as a cruiser, with a regiment of soldiers on board. In this way, and practically single-handed, the *Huascar* kept the Chilians at bay, and prevented their operations, until discontent in Chile reached such a pitch that the Chilian men-of-war were recalled to Valparaiso and thoroughly overhauled, and the whole squadron again sent forth to hunt this brave and persistent unit down to the death.

And so it befell—the historic fight of the 8th October 1879, in which Admiral Grau and his crew and the old ironclad *Huascar* covered themselves with glory, leaving their name as a lasting inheritance to Peruvian arms. The maritime nations of the whole world were interested in the result of these conflicts upon the South American coast, for they were the first engagements which had taken place between modern ironclads.

A misty morning off the barren coast of Antofagasta; two men-of-war, the *Huascar* and *Union*, flying the standard of Peru, steaming quietly northwards. The mist lifts: to the east was the sandy coast, backed by the foothills and faint grey range of the Andean Cordillera; to seaward—what? Three lines of smoke from as many hostile funnels. Admiral Grau of the *Huascar* signalled to his consort, knowing the inferiority of his metal to that of the Chilian squadron, which he had recognised, and the *Union* put forth her best speed, and was safe. Not so the *Huascar*. Upon the north-western horizon three other ominous lines appeared, which could be nothing but hostile steamers' smoke, and the Chilian vessels, *Cochrane*, *O'Higgins*, and *Loa*, drew rapidly up. All hope of escape was vain, unless, indeed, it were by fighting a way through, and the brave Grau prepared his ship for action against these fearful odds.

From her turret the *Huascar's* fire first opened the

battle; four shots, and the well-protected *Cochrane* was hit, but with little damage. At 2,000 yards the Chilean replied, and a shot striking the old hand-worked turret of the *Huascar*, deranged the apparatus, so that it ceased to revolve. Grau closed in and strove to ram, but the twin-screw manipulation and good seamanship of the Chilean captain, Latorre, rendered this abortive. It was an unequal fight; the heavy *Cochrane* of 3,560 tons, numerous guns and 9-inch armour, against the 1,130 tons and 5½-inch protective belt of the old *Huascar*. Shot and shell rained from both vessels, generally with but little effect, until, half an hour after the first firing, a shell from the Chilean struck and burst upon the conning-tower of the *Huascar*, and Grau and his officer were blown to pieces, only fragments of the Peruvian admiral being afterwards recognised.

Soon the *Blanco Encalada* appeared upon the scene of action, and at 600 yards fired her first shot, and followed it with others. A shell took off the head of the *Huascar's* second in command, and wounded the next in seniority. Scarcely had the next in rank time to assume command when he was in his turn severely injured by a shell, and the junior lieutenant assumed the direction of a vessel littered with dead and dying. Mutilated bodies lay in every direction; the turret was injured; the guns silent in the tops and disabled below; yet still the unequal struggle was maintained, and the dying *Huascar* attempted the ramming of her enemies. But after somewhat less than a two hours' contest the Peruvians hauled down their battered and ennobled flag.

Thus was this sea-fight terminated, for the loss of the *Huascar* was the loss of Peruvian power upon the sea. Both nations had shown their fighting qualities as seamen. Ship had been given for ship: the *Esmeralda* had been avenged in the *Huascar*, and the brave Prat had been followed to a sailor's grave by the gallant Grau. The value of armoured ships had been shown, and—lasting lesson to nations whose existence depends upon sea-power—the necessity for upkeep of the fleet. For had Peru

possessed but a single new ironclad, the issue of the war which was to devastate and humble her might have been very different.

The sea-power of Peru eliminated, the Chilian advance was rendered possible. The day after the capture of the *Huascar*, a forward movement was made from Antofagasta, and ten thousand officers and men, with eight hundred well-equipped cavalry and thirty modern field-guns, left Antofagasta for Pisagua in fifteen transports, convoyed by four men-of-war. Although the Peruvians were ignorant as to which would be the first point of Chilian attack, it was rightly expected that this would be Tarapacá and its nitrate wealth, and great efforts were made by President Prado at Arica to concentrate a defending force there, before communications were cut off by sea. Some nine thousand men were assembled there, including the Bolivian allies, but the artillery was antiquated, consisting of old-fashioned bronze guns, and the cavalry was poorly mounted. The troops were commanded by General Buendia, seconded by Colonel Suarez, both good men, and a gallant resistance was opposed to the Chilian landing at Pisagua. Among the Peruvian officers were Colonels Velarde, Pastor, Davila, Villamil, Zubiaga, Recarbarren and others, including Andres Caceres, who afterwards took a prominent part in the defence and history of his country. Caceres commanded the second division, with Zubiaga, who had arrived by forced marches from Cuzco, crossing the Andes by its most rugged and inclement passes to gain the coast.

Hostilities were opened by fire from the Chilian men-of-war, who covered the landing of the soldiers after having silenced the guns of the forts. The sea front of Pisagua consists of a remarkable steep, sandy precipice, up which the railway zigzags from the town—built on a narrow margin of beach—to the plateau above. Along this zigzag the Bolivians were posted, whilst the Peruvians defended the forts, but the stubborn resistance offered was overcome by the fierce assault, and before midday the town had fallen, and the Chilians were advancing to take the cliff. A retreat was ordered by Buendia, and the

defenders fell back towards Agua Santa. The losses had been heavier upon the Peruvian side than the Chilian, five hundred men having been killed and wounded, whilst the Chilians lost two hundred and thirty-five, the Chilian wounded succumbing in many cases to the lack of medical supplies, which had been left behind in the hasty embarkation from Antofagasta.

The Chilians, after a skirmish with the Peruvian rear-guard under Sepulveda—in which the latter were defeated owing to their inferior equipment—occupied a strong position near the line of railway upon the San Francisco hill; a point which dominated the water supply of Pisagua. Some six thousand men, with thirty-two guns, were posted here, with reserves available in case of necessity. General Buendia saw that the only course for the Peruvians was to attack and capture this position, if possible, as the lack of water and provisions necessitated immediate action; for the region surrounding these localities is a desert—the barren wastes of the pampa of Tamarugal. His force numbered little more than six thousand men, as on the previous day the Peruvians had received notice that the Bolivian force under President Daza would not establish a junction with them, but had fallen back upon Arica. To reach the enemy's position, the Peruvians had a toilsome morning march of 14 miles, but in the afternoon, under a blazing sun, they commenced the engagement with a spirited attack upon the invaders' guns, under Colonel Espinar of Cuzco. The Chilian artillery was staggered by the attack, and the issue hung indecisive, when a ball pierced the head of the gallant Espinar, and he fell beneath the very muzzles of the Chilian guns. This disaster was followed up by a Chilian bayonet charge, and the men of Cuzco and Ayacucho, disputing step by step, were forced slowly down the hill. Two hundred Peruvian dead were left on the field, and—mark the proportion—seventy-six wounded! The Chilians lost two hundred and eight killed. The defeat might have been turned into an annihilation had the invaders followed the retreating Peruvians, but this they failed to do.

The village of Tarapacá then became the theatre of the struggle. This is but a small place, giving its name to the nitrate province, and consists of a few adobe houses and a church, surrounded by some lucerne fields, willows, and fig-trees, all contained in a narrow valley watered by a stream which flows from the Cordillera across the desert zone. It is incapable of supporting an army, and Suarez was sent forward with the Peruvian vanguard to a village some 15 miles higher up the valley, whilst General Buendia followed to occupy Tarapacá, with his staff and two thousand five hundred infantry. The toilsome retreat across the appalling Tamarugal pampa, a march of 30 miles, was accomplished, but the guns were unable to pass the sandy wastes, and were abandoned in transit.

Arriving at Tarapacá, the force was joined by the soldiers of the garrison of Iquique, for this important place had been evacuated by the Peruvians when the news of the San Francisco defeat had arrived. The Prefect of Iquique had sought shelter on board the *Shannon*—British man-of-war lying in the harbour—and the Chilian squadron had immediately entered upon possession of the port. These events cut off from the Government of Peru their great source of revenue—the nitrate districts, which consequently fell entirely under control of the invaders.

Buendia and his forlorn command rested at Tarapacá, without cavalry or artillery, whilst food and ammunition were scarce. The poor Indians who formed the bulk of his forces had valiantly endured the heat, thirst, and fatigue of these forced marches and engagements, for it is to be recollected that they were principally inhabitants of the Andean uplands, and accustomed to a cold and bracing climate. Notwithstanding their condition, Buendia and his officers resolved to make a stand, if they were pursued. The opportunity was soon afforded them. The Chilians had followed across the Tamarugal desert with infantry, cavalry, and guns, commanded by Colonel Arteaga, and almost unexpectedly appeared upon the ridges bounding the ravine of Tarapacá at both sides.

Hemmed in and surprised, the Peruvians, nevertheless, rapidly disposed their forces. Buendia and Suarez defended the valley floor against attack; Bolognesi protected the south side, whilst Caceres and Zubiaga scaled the precipitous sides of the ravine to attack the enemy. They reached the crest; the Chilians opened a withering fire, and Zubiaga fell at the muzzle of the guns at the moment which preceded victory. For the Indians charged home, and the Chilians gave way. Suarez was down, but Buendia held his own in the ravine against the detachment which attacked him there. The struggle grew more acute; again the Peruvians charged, capturing the Krupp guns of the Chilians, and, turning them upon their owners, forced them from the ridges. Now the vanguard of the defenders joined them from the valley. The Chilians were driven back at all points, and victory lay with the forces of Peru.

This substantial success was almost the only one gained by the Peruvians during the war. They had captured eight guns, lost two hundred and fifty-five officers and men killed, and two hundred and seventy-eight wounded. The Chilian casualties were six hundred and eighty-seven killed and wounded, or a total, without counting prisoners, of one thousand two hundred and twenty on both sides during a five hours' struggle. The Peruvians were the superior in numbers, but this was counterbalanced in great measure by their lack of artillery; and when they captured the enemy's guns, their force was much in preponderance. After their defeat, Colonel Arteaga ordered the Chilian forces to retreat, and they took their way once more across the Tamarugal pampa, unhindered by the Peruvians.

Notwithstanding this victory, the province of Tarapacá was lost to the Peruvians; there was nothing for them but to fall back upon Arica. This involved a march along the barren deserts of the Andean foothills parallel with the coast, but Arica was reached on 18th December by the jaded troops. Here the news of the disasters which had befallen the Peruvian arms, added to the loss of the *Huascar*, worked so much upon the mind of Prado, the

president, that he handed over his command to Admiral Montero, and returned to Lima. Thence he took ship for Europe, with the design of raising a loan and purchasing ironclads—a course which excited anger and unrest in Lima, abandoned by its president at such a juncture. The troops in Lima mutinied, and an armed populace declared for revolution. This was the restless and intriguing Piérola's opportunity, and placing himself at the front of the uprising, he was proclaimed President in December 1879.

The next phase of the war was the battles of Tacna and Arica, and the memory of this is graven deep upon the history of Peru. The traveller to-day, as he peacefully journeys down the long Pacific coast-line upon the comfortable steamers which ply thereon, beholds the fateful *Morro*, or promontory of Arica, jutting out into the sea. Here, on this precipitous headland, a life-and-death struggle—one of the most savage in the savage annals of South American warfare—took place, and the spot is held sacred by Peru—it has been freely watered with her blood and tears.

The Peruvians and Bolivians mustered at Tacna and Arica numbered six thousand and four thousand men respectively; a total of ten thousand officers and men, commanded by Admiral Montero, who was, however, replaced by General Campero, the President of Bolivia. The allies were, as before, supplied with defective artillery, and were badly mounted and equipped. The Chilians were commanded by General Baquedano, and embodied a force of fourteen thousand men, with batteries of Krupp guns and cavalry, and this army, towards the end of February 1880, landed at Ilo, a port some 80 miles to the north of Tacna, which controls the fertile region of Moquegua. Thus the Peruvians at Tacna were cut off on all sides. To the south was the lost province of Tarapacá; to the west, the sea, patrolled by Chilian ships; to the north, the enemy's force at Ilo; and to the east, the Andean Chain, which prevented rapid movement in that direction. At the same time a Chilian expedition was

landed at Mollendo, the port and railway terminus for Arequipa. A Peruvian force under Colonel Gamarra, intrenched at Torata, was encountered as Baquedano advanced, but was driven out after a stubborn defence. Still further on, along the route to Tacna, another fight took place with a body of Peruvian horse under Colonel Albarracin, which was cut to pieces.

The commander of the allied forces of the defenders had taken up a position on rising ground, defended by ravines, just outside Tacna. The principal staff officers and chiefs of divisions were Colonels Camacho, Pinto, Suarez—of Tarapacá fame—Perez, Caceres, and others. The Chilians, on 26th May, advanced to the attack and opened with a tremendous fire from the Krupp guns at 4,000 yards. The Bolivians, who fought bravely in the most exposed position, suffered heavily, but Campero, sending reinforcements, almost turned the tide in their favour, and the Chilians were hurled down the hill, rallying, however, under aid of a cavalry charge and heavy, concentrated artillery fire. For two hours the battle raged—fought with great fury and tenacity on both sides—but Peru was to lose. The slaughter was grievous; the left and right divisions gave way; the centre collapsed. The day was lost. Montero strove to stand, with the brave survivors of Tarapacá, and had the rival forces been more nearly equal, another tale might have been told. Campero retreated with the Bolivians up the valley of Tacna and over the Andean passes to Bolivia. The fierce fighting was shown in the losses—two thousand one hundred and thirty Chilians killed and wounded, and three thousand one hundred and fifty Peruvians, or a total of nearly a quarter of the combined armies, in a fight lasting only some four hours. It is stated that the Chilians butchered the wounded Peruvians with their knives as they lay on the field.

And now the desperate struggle among these oases and sandy deserts of Southern Peru culminates in a final action: the battle of Arica and the Morro, before mentioned. Arica is a seaport just in that angle of the coast of South America

where its direction changes from north to north-west. Its green trees and broad, irrigated *campiña* form a refreshing spot in the monotony of the barren littoral which day by day has wearied the traveller's eyes from the steamer's deck. As the vessel lies at anchor but a few cables' lengths from the Morro's base, the cliff rises abruptly upwards for some 700 feet from the beach.

A few days after the battle of Tacna, the Chilean commander, General Baquedano, invited surrender of Arica under a flag of truce. The reply was a negative. The Peruvian force in the town embodied some two thousand men under Colonel Francisco Bolognesi, and included fourteen hundred volunteers and three hundred artillery apprentices. The artillery consisted of twenty guns, nine of which and some Gatling guns were mounted on the Morro, and others in sand-bag forts on the ridge which descends to the town, with three batteries upon the beach. The monitor *Manco-Capac* was anchored under protection of these, as opposed to the blockading squadron of the Chileans, and the only other remaining unit of the Peruvian navy, the wooden corvette *Union*, commanded by Captain Villavicencio, had left Callao, and gallantly and successfully run the blockade, landing guns, ammunition and clothing, and returned to Callao, in spite of the effort of the Chilean squadron to destroy her. Among the defenders of the Morro were Captain Moore of the lost *Independencia*, with two hundred and fifty of his crew—resolved to atone for the loss of their ship, or perish fighting. The Chilean force consisted of four thousand men, backed by the squadron, which included the *Almirante Cochrane*, the *Covadonga*, and the famous old *Huascar*, now flying the enemy's flag.

Fire was opened on 5th June from the attacking squadron upon the forts, the Peruvian guns giving a good account of themselves in reply, killing and wounding twenty-eight men on the *Cochrane* with a shell, and damaging the *Covadonga*. On the following night the Chileans laid plans for storming the Morro at daybreak, two thousand men being told off for this purpose, whilst

one thousand should proceed against the sand-bag forts on the ridge, another thousand being held in reserve. These arrangements were carried out effectively, and the redoubts on shore and the outworks of Morro hill were carried by surprise assault in the face of a heavy fire from the garrison. A frightful hand-to-hand struggle then ensued upon the summit of the Morro. The overpowering numbers and ferocity of the Chilians—for here the *roto*, or Chilian common soldier of Araucanian stock, showed his remarkable fighting qualities—swept onward, and notwithstanding the heroic defence of the Peruvians, the battle was lost for Peru. The brave Bolognesi, with Moore and Ugarte, surrounded by a few staunch adherents, fighting to the last, was called on to surrender. He refused, and, with his companions, was slaughtered, his head being pierced by a bullet and his brains dashed out, whilst the body of Ugarte was thrown over the cliff. Seven hundred Peruvian officers and men were killed, and one hundred wounded. Some were driven, fighting, over the verge of the cliff, and died lingeringly days afterwards clinging to the slope. The captain of the *Manco-Capac*, Lagomarsino, seeing the issue of the struggle, ordered out the boats, opened the valves of his ship, and she went to the bottom.

The conduct of the Chilians after the capture of Arica has been much censured. It is stated that they murdered the wounded and shot the fugitives in cold blood, and the United States minister, in his report, stated that they "behaved more like a band of savages than an organised soldiery of a country calling itself civilised."¹ In this, as in other engagements, the Chilians showed their fighting qualities of dash and energy, for which the impartial historian will not withhold his meed of praise, whilst recording that they tainted them with unnecessary cruelty.

The stand of Bolognesi and his companions, and the struggle on the Morro of Arica, are classic deeds of Peruvian arms, and the name of this hero has gone down to the history of his country with merited fame.

¹ Markham's "History of Peru."



STATUE OF BOLOGNESI IN LIMA.

To face p. 90.

CHAPTER VIII

HISTORY—THE CHILIAN WAR (*continued*)

1880-1884

Nicolas Piérola—Blockade of Callao—Chilian naval officers—Lynch—Naval disasters—Loss of the *Covadonga*—Bombardment of coast towns—Expedition of Lynch—Chilian devastation—North American efforts for peace—Chilian army of invasion—Gallant Peruvian defence—Lima—Chilian attack on Lima—Surrender of Iglesias—Losses—Fall of Chorillos—Armistice—British minister—Battle and fall of Miraflores—Losses—Action of foreign admirals—Destruction of Peruvian vessels—Chilian occupation of Lima—Wanton destruction—Chilian energy and valour—Efforts for peace—Calderon Congress—United States' disapproval—Banishment of Calderon—Montero ministry—Resistance of Caceres—Defeat of Caceres—Fall of Arequipa—Iglesias and peace—Treaty of Ancon—Evacuation of Lima.

A COUNTRY divided against itself at the time of war with an invading foe was that of which Señor Nicolas Piérola had assumed the direction of affairs in December 1879. The absence of the president, Don Mariano Prado, in Europe, had led to armed revolt against the Government, and after sharp fighting in the streets of Lima, the vice-president, General La Puerta, had resigned, Piérola being proclaimed Chief of the Peruvian Republic. These political disturbances in the national capital were not conducive to a vigorous conduct of the war, or to the sending of reinforcements to the beleaguered south. Nevertheless, Piérola took steps for vigorous defensive measures.

It might have been supposed that the Chilians, having conquered the southern provinces—the object of the war—and put themselves in possession of the nitrate and guano

would have ceased from further operations and continued bloodshed. But such was not the case, and the war was continued with devastating insistence. Callao had been blockaded on the 10th April 1880, and remained in this state for nine months.

The investing squadron consisted of the *Blanco Encalada* the *Huascar*, three other vessels, including the *Angamos*—a steamer purchased in Ireland and fitted with a heavy long-range gun—and five torpedo-boats, four of British build and one constructed in the United States for Peru and captured by the Chilians when *en route* for Callao. It is a noteworthy fact that a number of the Chilian naval officers who had taken part in the campaign since its beginning were men whose names denoted British birth or extraction, including such as Simpson, Walker, Rogers, Lynch, Cox, Wood, Leighton, and various others. Lynch, of whom more is to be heard, had served for a number of years in the British navy.

To the foregoing force the Peruvian defences opposed at Callao were: the *Atahualpa*, an old coast-defence monitor; the *Union*, and three school-ships, with a torpedo-boat and some launches. The shore defences consisted of the old castle of Callao, two armoured turrets, two forts on the projecting spit of land, and six batteries with small guns.

The Chilian admiral, Riveros, had notified the authorities and foreign representatives of the beginning of the blockade, and of his intention to bombard the port; and this began on 22nd April. During the operations in the ensuing months the Chilians suffered some severe naval disasters. On 10th May the *Huascar* was struck and damaged, after a Peruvian school-ship had been sunk. On the 25th, the Chilian torpedo-boat *Janequeo* was destroyed and sunk by Lieutenant Galvez of the Peruvian steam-launch *Independencia*. On 3rd July the Chilian transport *Loa* was exploded by a captured Peruvian provision vessel, and later on the *Covadonga*, the valued prize captured by Chile from Spain in 1866, met a similar fate. In revenge for these losses the Chilian squadron

bombarded the defenceless towns of Ancon, Chorillos, and Chancay upon the coast, not far from Callao.

Shortly afterwards, in September, the Government of Chile, desirous of adding further losses to the Peruvians, organised and sent out a devastating expedition of two thousand men under Captain Patrick Lynch, of whom mention has been made. Lynch was of Irish descent, some sixty years of age, and an energetic and able officer, but his mission and work were barbarous. This was to lay waste the northern coast towns of Peru; and it was carried out in spite of strong protests from representatives of foreign governments, whose subjects' property was violated. All the ports from Callao northward to Payta were visited, Government works of wharves, railways, etc., destroyed, and factories, sugar-cane plantations, and property of every description, burnt and blown up, including costly machinery, houses, books, furniture, horses, telegraph lines, flocks of sheep, and, in short, anything that the Chilian soldiers could easily lay hands on. It is not to be supposed that a triumphant soldiery, whether formed of such elements as the Chilian *roto*, or whether of a more civilised European army, would be likely to employ gentle methods after conquest; but the methods of the Chilians upon this occasion overstepped all bounds, and have been universally condemned. A Chilian senator had protested against this expedition, and his account of it is among the most condemnatory.

But the bitterest hour of Peruvian destiny was yet to approach—the capture and occupation of their capital, for the efforts to bring about peace, made by the United States in October, failed. The Chilian Government was induced to agree to a conference on board the American corvette *Lackawanna*, and delegates were appointed thereto by Peru, Chile, and Bolivia, whilst the United States ministers to the three countries also were present, without, however, taking more than an organising part. The Chilian demand was heavy: to retain Tarapacá; a payment to Chile of twenty million dollars; abrogation of the treaty of 1873; an obligation by Peru never to fortify

Arica, and the retention of Tacna, Arica, and Moquegua pending settlement, with other minor matters. The Peruvian representative met these demands by showing that they rested principally on the right of annexation by conquest, without regard to equity, a principle foreign to Spanish-America, and incompatible with the principles of free republics. The Chilians refused to modify their terms, stating that they must be compensated, and that part of the conquered territory, Atacáma, owed its prosperity to Chilian enterprise. The futile conference closed with a proposal by the Peruvian delegate for referring the matter to arbitration by the United States, which was peremptorily refused by the Chilians. Further war and bloodshed were to be the only arbiter.

Chile now taxed all her resources in great preparations for an invasion of Peru on a large scale. An army of thirty thousand men was organised under General Baquedano, and transports secured for its conveyance to the Peruvian coast. The expedition consisted of three divisions, under Captain Lynch, General Sotomayor, and Colonel Lagos respectively. These consisted of cavalry, infantry, commissariat, ambulance, etc., with more than seventy-seven guns. The Lynch division disembarked at Pisco, the others at Curayaco, a point nearer Lima, where a junction was effected.

The Peruvian call to arms in defence of their *patria* included all citizens of Lima between sixteen and sixty years of age; so ran the decree. But a decree cannot make an army, and the fighting-men of Peru—where were they? Food for birds of prey, and whitening heaps of bones in the deserts of Tarapacá and the sand dunes of Tacna and Arica.

Nevertheless, two thousand veterans assembled. There was old Buendia; there were Montero and Caceres, Suarez, Silva, Davila, Iglesias, and Canevaro. There were the young men of fashion, and clerks, journalists, magistrates, who formed themselves into regiments to protect their homes in default of an army. From the Andean uplands the Indians of Jauja and Ayacucho poured down to do

battle for their country, and Italians and other foreign colonists made common cause against the invader—a total of twenty-six thousand men to bear arms, the greater part being simply recruits. The field-guns were of poor quality, and could not be expected to stand against the modern weapons of the invaders.

Lima at this time had a population of about 100,000 inhabitants, including some 15,000 foreigners—contractors, merchants, speculators, shopkeepers, etc. It was a large, handsome, and busy city, one of the foremost on the whole coast-line of the Pacific Ocean of two continents. In the short time at disposal, two lines of defence were thrown up, one along the verge of the Rimac valley from Chorillos, a fashionable watering-place on the coast 10 miles from Lima, and another from Miraflores, 6 miles away, the town of handsome residences of the Lima people. The guns were posted and trenches formed, and, aided by the natural formation of the ground, the positions were of considerable strength, and, indeed, were pronounced almost impregnable by Señor Piérola and his staff.

Towards the close of January 1881 the Chilians attacked the first line of defence. The ground was held tenaciously by the defenders, but after severe fighting, heavy firing, and bayonet charges by the Chilians, the Peruvians were driven back, and the defences carried, with a terrible slaughter of Lima volunteers under Canevaro. The troops under Iglesias, who had taken a stand on the Morro Solar, a steep hill overlooking Chorillos, offered a difficult task to the Chilians under Lynch to dislodge them, but after three hours' severe fighting the enemy's artillery told so heavily that Iglesias considered further resistance useless, and surrendered to save further loss of life. Caceres was making a stand at Chorillos with three thousand men, but his ammunition becoming exhausted, the Chilian second division carried the place with the bayonet, with heavy losses on both sides. The Peruvian casualties in this engagement were five thousand killed, four thousand wounded, and two thousand prisoners. The enemy's losses

were eight hundred killed and two thousand five hundred wounded—a total loss of more than one-quarter of the combined forces engaged during the battle.

The Chilians then occupied Chorillos. Along the first line of defence the bodies of four thousand Lima volunteers lay scattered—brave youths, many of them, who had given their blood in defence of their homes; and thus the first day's fighting closed of ill augury for Peru.

On the following day, the 15th, an armistice was arranged by the foreign ministers in Lima, Sir Spenser St John, of Great Britain, Monsieur de Vosges, of France, and Señor Pinto, of San Salvador, at the request of Señor Piérola, who hoped to make some arrangement to avoid further bloodshed. But through a mistake occasioned by the Chilian general, Baquedano, the terms of this short armistice were violated, and the Peruvians opened fire, believing themselves attacked.

The whole of the second line of defence quickly became involved in action. Thirteen thousand Chilians attacked Miraflores, as soon as the bombardment of the squadron had ceased. The Peruvian guns on the San Cristobal and San Bartolomé hills kept the enemy at bay until evening, when Chilian reinforcements came up and under additional gun-fire and heavy bayonet charges the defenders were overcome. A desperate attack made by the Peruvian right had afforded a diversion for a moment, and the enemy wavered, but it was insufficient to save the situation. For four hours the defence of the second line was sustained. Heaps of dead and wounded Peruvian citizens and youths attested the bravery of Lima's citizens, as did also the dead and dying of the "Garibaldi legion" of Italian colonists. Editors, members of Congress, judges, clerks, landed proprietors—all lay there among the three thousand killed and wounded before Miraflores; whilst the two thousand one hundred of the prostrate Chilians showed the account for the enemy, and the tenacity with which they waged this war of conquest. All hope was lost for Peru. At nightfall the firing ceased and Piérola, Buendia, Suarez, and other officers mounted



LIMA : PLAZA OF THE INQUISITION AND BRONZE STATUE OF BOLIVAR.

A STREET IN LIMA.

their horses and spurred away to the mountainous interior of the Andes. The town of Miraflores was committed to arson and plunder by the conquering soldiery, and Lima might have shared the same fate had not the foreign admirals and ministers taken a firm and even menacing stand. For this reason the Chilian occupation of Lima—which was now at their mercy—was delayed for a day, when, on 17th January, they entered and took possession of the city. The loss in killed and wounded upon the lines of defence of Lima was, in the two engagements five thousand five hundred Chilians, and more than double that number of Peruvians—a total of nearly seventeen thousand five hundred men.

The British and other legations at Lima became refuges for hundreds of people begging for shelter and protection. Many of the inhabitants concealed their treasures in fear of a general loot of the Chilians. An Urban Guard was formed, principally by members of the foreign colonies, and preserved order in the streets, in conjunction with the detachments of marines landed by the British and French admirals. Fugitives poured in from the vanquished army, but the wise action of the admirals in delaying the occupation of Lima by the conquerors prevented the excesses which the excited and victorious Chilian soldiery would have committed. As to Callao, the Peruvian vessels remaining there were scuttled or destroyed by their captains to prevent them falling into the possession of the enemy, and this act has been criticised in view of the fact that the engagements were over.

Upon the Chilian occupation of the capital certain measures were taken by the commandant, General Saavedra, to establish and maintain order, but they were lax or insufficient, and again it has to be chronicled that wanton and useless damage was carried out upon public property by the Chilians. The national library was turned into a barrack, and its valuable books and priceless manuscripts and archives were thrown about, destroyed or sold as waste-paper. Works of art and scientific instruments did not escape, and the spoliation of the capital at this

period has left an exceedingly bitter memory with the people of Lima which time has not served to dispel. In the interior towns and villages, where the Chilians penetrated, excesses were committed upon the conquered natives, and these retaliated by secretly murdering the soldiers upon occasions. So much were they hated, that even the women lured them out at times and caused their murder. To the traveller in those regions to-day, these events are still recounted, and the punishment inflicted by the Chilian officers upon the inhabitants—that of *quintar*, literally to *fifth*—which consisted of assembling the villagers, forming them in line, counting them, and shooting every fifth man innocent, or guilty.

But if general censure has been meted out to the Chilians for these matters, a measure of praise must not be withheld for the energy and tenacity with which they carried on their conquest. It is to be recollected that they were operating far from their base—Valparaiso is some 1,600 miles from Callao, and all troops and war material necessarily came by sea. The hardy fishermen of the southern Chilian coast formed excellent sailors; whilst the turbulent *roto*, drawn largely from the Indians of Arauco, were born fighters, and, indeed, it is doubtful if they could always be controlled by their officers during the occupation of Peruvian territory. Yet, withal, it seems remarkable that a sister-nation should have tyrannised so acutely over people of practically the same race, which had been allied to them in the throwing-off of European domination, and in the carrying forward of a new civilisation. The historian, concerned only with the truth, cannot withhold sympathy from the Peruvians at these events, for whatever may have been their faults previous to the war, the results dealt out to them were undeservingly bitter.

The Chilians occupied Lima for two years and nine months. Soon after the occupation General Baquedano was succeeded as commander-in-chief by Admiral Lynch—the former ravisher of the coast. The Chilian Government desired now to arrange terms and withdraw its

troops, but for the moment there seemed to be no responsible authority to treat with, for Piérola was in the interior, and, moreover, he declined to treat on the basis of forfeiture of any part of Peruvian territory, which the Chilians demanded. But a conference of prominent persons of Lima was called, resulting in the summoning of a congress presided over by Dr Calderon, a well-known lawyer, with Admiral Montero as vice-president. This assembly was officially recognised by the United States Government in June 1881. It was well known that the United States disapproved of the Chilian invasion, and, indeed, North American sentiment favoured Peru then, to some extent, as it does at the present — a certain feeling of rivalry having sometimes existed between Chile and the United States.

It appeared at first that this congress might bring about an arrangement, but the same stumbling-block was encountered, and sanction to alienate any portion of Peruvian territory was withheld to President Calderon. Suspected of intriguing with the United States, and in the interior, Calderon was banished by Lynch, in September 1881, to Chile, and the Administration disbanded. Admiral Montero, in view of his position of vice-president, proceeded to Arequipa, and, taking the title of President, set up a ministry. This was accepted by the Peruvians, for Piérola, who had assembled a congress at Ayacucho after the *débâcle* of Miraflores, had resigned and gone to Europe. The ministry formed at Arequipa consisted of a War Minister, Colonel Velarde, Finance Minister, Dr Oviedo, Minister of the Interior, Captain Carillo, Foreign Affairs, Dr del Valle, Justice, Dr Serpe. This Government, however, was not recognised by Chile.

It is not to be supposed that the whole of Peru had been subjected to the invasion of the Chilians. Caceres, the famous fighting general, had maintained a brisk guerilla warfare in the Andine regions, for he interpreted the will of the nation to the resisting of the invaders, in the hopes of securing a more honourable peace. This necessitated constant expeditions by the Chilians, and

some of these were conducted as destructive raids, and Trujillo, Cajamarca, Huánuco, Ica, and other towns, suffered severely from this desultory warfare and depredation. It is a matter for surprise for the traveller of to-day that the Chilians should have gained such relatively easy access to these mountain regions, where passage is necessarily maintained through steep ravines and narrow passes, where it would seem that a whole attacking army might be kept at bay by a small resolute defending force. The explanation is, that a certain apathy had taken possession of the Peruvian inhabitants, due to their losses and to political dissensions, and organised resistance in the interior was not generally offered.

Caceres, however, maintained a stubborn front in certain regions. In February 1882, having organised a force at Ayacucho, he attacked a Chilean expedition under Canto at Pucará, on the Mantaro river, and after a battle lasting five hours, in which the Peruvians fought without artillery against eight field-guns of the invaders, the Chilians were driven back. In July he routed Canto at Concepcion, forcing him to evacuate the Jauja valley. In September a Chilean force went to Cajamarca—the city of Inca fame and of Pizarro's deeds—and demanded a toll of sixty thousand dollars, setting on fire a portion of the place when it was not forthcoming. In July 1883 an engagement disastrous for Caceres and the Peruvians took place at Huamachuco. The Chilians took up a position upon a hill, intrenching themselves in a group of prehistoric ruins there, and opened a heavy artillery fire. Caceres resolved to storm this position, but at the same moment the Chilians descended and engaged with the bayonet. They were driven back again by the Peruvians, who withstood the deadly artillery fire, but failure of ammunition and lack of bayonets necessitated retreat, and the Chilean cavalry appearing in the rear, the Peruvians were routed, and fled, losing six hundred dead. Caceres returned to Ayacucho in August, bent upon organising another force.

At Arequipa, that city which has figured so largely in Peruvian history, a force of five thousand men had

been concentrated by the Peruvians, arms and ammunition having been obtained through Bolivia from Buenos Ayres, by way of Lake Titicaca, and delivered to the Montero Administration. The Chilians organised a well-equipped force to crush this opposition once and for all, which embarked at Callao in July 1883, and advanced into the interior. Arequipa then fell, Montero was forced to abandon the city, and his Administration was broken up.

The obstacles to peace had been in the Chilian demands for alienation of territory, which terms had been withstood by the majority of the Peruvians. General Iglesias, one of the Peruvian leaders in the defence of Lima, however, had taken it upon himself to issue circulars in October 1882 in the northern part of the country, advising peace through submission to these terms, which proposal had not found acceptance, but had been met with a counter manifesto from Caceres, supporting the view of the Arequipa Government against submission. Admiral Lynch, now that Arequipa had fallen, turned to Iglesias as holding—in the Chilian idea—the more common-sense view, and which, indeed, was largely entertained in the north, of securing control of the national capital and of the country again, even at the sacrifice of the province of Tarapacá. In accordance with this movement Iglesias agreed to form an Administration, without reference to Arequipa or the followers of Montero, and in spite of the bitter opposition of Caceres. This course, whatever its aspect, was the only one to obtain the evacuation of the country by the enemy's troops. Thus the Treaty of Ancon was entered into, and signed on 20th October 1883. It differed but little in its terms, save as to monetary indemnity, to those which had been discussed on the *Lackawanna* at Arica, in October 1880; and whilst a large section of the Peruvians declined to accept it, the Chilian Government considered the authority of Iglesias and his supporters sufficient, and the troops evacuated Lima on 22nd October 1883.

By this Treaty of Ancon the province of Tarapacá and its nitrate was ceded unconditionally and permanently to Chile. Tacna and Arica were to be held by Chile for ten

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years, at the expiration of which period a popular vote should determine to which country the provinces should permanently belong, a payment of ten million dollars to be made by the country which should so retain them. Other matters stipulated were concerning the indemnity, guano shipments, etc.

President Iglesias, as shown, was not the choice of the Peruvians as a whole, and it was necessary to uphold his authority by means of Chilian bayonets; and Lynch remained at Chorillos pending the ratification of the treaty with five thousand troops, the main body of the army, meantime, being embarked for Valparaiso, anxious to return to their homes after an absence of more than five years, since the declaration of war in 1879. On 8th May 1884 the treaty was ratified, when the last Chilian troops took their departure from Callao, leaving a bleeding and humiliated nation to nurse their grief and hatred, and to recover, if they could, the ravages to which they had been subjected.

CHAPTER IX

HISTORY—RECENT DEVELOPMENTS

1884-1908

Condition at the close of war—Iglesias and Caceres—Civil wars—Descent of Caceres on Lima—Council of Ministers—Elections—President Caceres—Foreign debt—Contract with bondholders—Chile's refusal of agreement—Arrangements made—Peruvian Corporation formed—Terms of agreement—Social and internal improvements—Military dictatorship—Election of Bermudez—Usurpation by Borgoño—Insurrection under Piérola—Fighting in Lima—Defeat of Caceres—Influence of British minister—End of military *régime*—Provisional Committee—Candamo—Election of Piérola—Improvements under Piérola—Gold standard currency—Small disturbances—President Romaña—Influx of American capital—Influence of the Peruvian Corporation—Election of Candamo—Progress made—Taxes—Elections for President—Pardo and Piérola—Election of Pardo—Forward policy—Present condition and progress.

THE simile of the Phoenix rising from its ashes is ever a favourite one among Spanish-American orators, and the Peruvians have often applied it, not unjustifiably, to their own condition. But the ashes of prostration to which the republic found itself reduced after the Chilian invasion were such that any recuperation would necessitate much time and effort. There was not a dollar in the Exchequer; the heavy losses in the various engagements had materially reduced the population, especially among the Indians; and, moreover, the country suffered the added misfortune of being politically divided.

General Manuel Iglesias and his Administration did not represent the Peruvians as a whole. Caceres and his party were bitterly opposed, and counted upon a large following,

whose centre of action was at Jauja, in the fertile valley of Huancayo. This party proposed that Iglesias should resign, and that a free election should take place; but this Iglesias refused to do, maintaining forcible possession of the Executive. In August 1884 a descent was suddenly made by Caceres and his forces upon Lima; severe fighting ensued in the streets, but he was repulsed, and retired upon Arequipa to reorganise. Constant skirmishing followed, and Trujillo was taken and retaken. In September 1885 an army of three thousand men was sent from Lima against Caceres, under Colonel Relayze, but was out-manceuvred by the strategist, who saw the opportunity for an audacious *coup*. Marching rapidly to the railway at Chicla, and leaving the force of the constitutionalists on the far side of the swollen Jauja river, he captured the rolling stock, entrained his forces, and again made a sudden descent upon Lima.

Consternation reigned in the capital, and some fighting ensued, but a conference was arranged between Iglesias and Caceres, resulting in the resignation of both, and the appointment of a Council of Ministers, under the presidency of Dr Antonio Arenas. This body was charged with the function of electing a president and forming a congress; which was carried out, with a result that Caceres was chosen as chief magistrate, and took office on 3rd June 1886, with Colonel Bermudez and Señor Aurelio Denegri as first and second vice-presidents respectively.

The foreign debt still weighed heavily upon the country, payment of interest upon which was impossible in its impoverished condition. Sources of industry were paralysed, and the nitrate of Tarapacá, which had been secured to creditors, and a great part of the guano deposits, were gone. In 1889 the amount of external indebtedness, including the arrears of interest on the bonds, reached the sum of forty-five million pounds, and the impossibility of meeting these obligations with a total revenue of less than seven million dollars, out of which more than six million were required for the country's expenses, under strictist economy, was apparent. At this juncture a



Photo

OUTSKIRTS OF AREQUIPA.

[N. P. Edwards.

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proposal was made by the foreign bondholders to the Caceres Government for a scheme to cancel this debt. The bondholders were to take over the national railways, with certain guano rights, mining privileges, and land grants, delivering over to Peru one-half the obligations held abroad, the settlement of the remaining half to be forthcoming from Chile. To this plan, however, the Chilians refused compliance, and some protest was made by foreign governments on behalf of the bondholders' claims, against the Chilean decision. But an arrangement was at length made, by which Chile gave over a portion of the proceeds of the guano, and an agreement and contract was entered with the bondholders which wiped off the enormous Peruvian obligations. In April 1890 a company was formed in London known as the "Peruvian Corporation"—in which the bondholders became shareholders—to carry on this contract. Among the principal matters stipulated were: the ceding by Peru of all her State railways, certain sections of which the Corporation were to extend; free use of certain of the ports on the coast—Mollendo, Pisco, Ancon, Chimbote, Pacasmayo, Salaverry and Payta; the right of navigation on Lake Titicaca; the guano existing in Peru up to a certain amount; land and colonisation grants, etc.; and thirty-three annual subsidies of eighty thousand pounds, secured on the Callao customs. The arrangement seemed a good one, the Corporation acquiring valuable concessions, and the country being relieved from its external debt. But the annual subsidy was soon found to be more than the resources of the country could bear, and its payment fell into arrears, with the result that the Corporation suspended the building of the stipulated sections of railway line. These matters formed the subject of bitter contention between the Government and the Corporation, and had the effect of greatly retarding the development of the country. Only in 1907, after many fruitless efforts, has an adjustment of the question been obtained.

During the Caceres Administration efforts were made to improve the social condition of the Indians. The army

was reduced, and the police put on a better footing. The navy consisted only of two small steamers. The national library was restored, largely by the efforts of a Peruvian man of letters, Señor Ricardo Palma, and the San Carlos University, the oldest in the Americas, and which had been used as a cavalry barrack by the Chilians, was restored to use. The Caceres Administration was uneventful historically, fortunately for the country, which was wearied of warfare abroad and at home. But it was a military dictatorship, and the governing clique principally absorbed the small national resources. There was much misery and poverty throughout the country; the national spirit was but slowly recovering from the blow it had received; whilst public affairs made slow progress, and private enterprise scarcely lifted its head. Corruption in the official departments also was rife.

At the end of his legal term President Caceres, in August 1890, gave place to Colonel Bermudez, who had been declared elected, and the ex-president was appointed Minister to Great Britain and France. Caceres, however, still largely influenced the Government, and it was not his intention to relinquish all control of affairs. At this period the country began to recognise the fact that its progress demanded a civil rather than a military head and executive. But when the end of Bermudez's presidency came, by his death in April 1894, on the eve of the elections, disturbances arose due to the action of the second vice-president, General Borgoño, in usurping supreme command against the legal right of Dr Pedro del Solar, the first vice-president. Solar represented the party for civil government, and the illegal action of Borgoño was induced by the military element. This was again a turning-point, and a farewell to peace and order for a season, for more Peruvian blood must flow in response to personal ambitions. Congress was opposed to Borgoño; it was dissolved, and elections held to secure representatives favouring Caceres, who was proclaimed President, and took office on 10th August. In September an insurrectionary force had grown into being under Señor Piérola, and although

the army of the republic naturally remained with the Caceres party, the insurrections gathered strength, and in March 1895 concentrated near Lima.

Caceres counted upon some five thousand men in defence, some of whom, however, were waverers. The insurgents numbered five thousand. The attack was made; the 17th and 18th of March witnessing a bloody and fratricidal struggle in the streets of the capital. The sympathies of the people were with Piérola, and Caceres was defeated, three thousand lives being lost in three days' struggle. A suspension of hostilities was effected by the action of the British representative in Lima, Mr Alfred St John, to whom credit is due for the avoidance of further bloodshed. Convinced of the futility of further strife, Caceres embarked on board a neutral vessel in Callao, and the streets of Lima were cleared of the dead and dying which lay there.

Military control gave way to civil as a result of this conflict, and a provisional committee for Government, consisting of Señores Salazar, Villaran, and Malpartida, under Señor Manuel Candamo, a highly-respected citizen, was formed. A general election was then held, Señor Nicolas Piérola being called to the presidency as a result.

The administration of Piérola was characterised by considerable advance along the lines of internal and industrial development, which was the course now marked out by Peruvians as their salvation. Reforms in electoral matters were instituted, and these were much needed. Various public buildings of importance were constructed, including the Lima Post Office, State Prison, Asylum, Barracks, etc. The marriage ceremony before diplomatic representatives and by ministers of religions other than the national one was legalised. The adoption of a gold standard for the currency, replacing the fluctuating silver monetary system, was brought about; the unit adopted was equivalent to the British pound sterling. Means of communication in the interior, and with the vast Peruvian region of the Upper Amazon, were opened up. Some small revolutionary movements occurred during this term:

one at Iquitos—the fluvial port of the Amazon region—and another under Señor Durand, a leader who had figured in the movement against Caceres. But neither of these were serious, for the spirit of the people was altogether against further strife, and no serious conflicts ensued.

At the end of Piérola's term the elections were duly held for a successor, and Señor Eduardo de Romaña became president on 8th September, with the country's general approval. Romaña was a member of a prominent family of Arequipa, and had been educated in England, at Stonyhurst. He further had studied for, and taken a degree as, an engineer at King's College, London; and whilst he had not acquired much experience in politics, he nevertheless successfully filled the Presidential Chair throughout his term. He was alive to the necessity for the development of the resources of the country, and, fortunately, his administration was not embarrassed by disturbances other than some small political intrigues such as inevitably take place in a country which, as Peru was evolving a *régime* of civil government. During this term there was some influx of North American capitalists, who acquired important interests, in the copper mines of Cerro de Pasco, and who commenced the construction of a railway line thereto. This element was strongly welcomed by the Peruvian Government as an offset to the alleged antagonistic attitude of the British interests represented by the Peruvian Corporation, which was generally charged, rightly or wrongly, with attempting to thwart industrial development, in retaliation for the non-payment of the subsidy.

The presidency of Señor Romaña uneventfully expired at its natural time; elections were held, and Señor Manuel Candamo, who had already provisionally been head of the State, was chosen as president in May 1903. Candamo had been successful in quieting political animosities after the revolt against Caceres, and in consolidating the political situation. Peru now showed real evidences of advancement. The old turbulent element was passing away; those leaders who had placed purely personal ambition before



THE PRESIDENT OF PERU, 1904-1908.

Dr. Don José Pardo.

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the true interests of their country had given place to the natural talent and ability of the best citizens whom the times were calling to the front. Candamo's rule promised well for the country. He was surrounded by able men, among whom, as chief cabinet minister, was Dr Domingo Almenara, an upright lawyer. The fiscal revenue was increased by taxes, against which there were murmurings, but which the country was able to bear, and the tax on tobacco was set apart for the construction of new railways. Unfortunately, this able administrator, Señor Candamo, continued but a short time in office, for he was overtaken by illness, and died at Arequipa in May 1904.

This event left the country under the temporary leadership of the second vice-president, Señor Calderon, for the first vice-president had died also. An election was at once called according to law, the two candidates which were put forward being Dr José Pardo, son of the former president of the same name, and Señor Nicolas Piérola, who had already been at the head of the Government on two occasions. Rivalry between the partisans of these two candidates became acute, and although it was feared for a moment that some disturbance might occur, good sense prevailed, and the elections proceeded without interruption. Both contestants were good men—Piérola representing the party known as the *Democratas*, whilst Pardo headed the *Civilistas*. There were not very radical differences of principle underlying these distinctions of name; both were for civil government and for national progress. Piérola had done good work during his former term, whilst Pardo had the prestige of the good name and administration of his father, the former president of 1872-1876, and was also held in esteem personally among the best element of the country. The result of the election—held, probably, more fairly than ever in Peru before—fell to Dr Pardo, who took the presidential scarf and office in September 1904, and who still guides the affairs of his country in a manner which has won the esteem of the nation, in a general sense.

Dr Pardo's Cabinet was formed of some of the most

capable men in the country, prominent among whom was the Minister of Finance, Señor Leguia, to whose work is largely due the improved financial situation.

At the present time—1908—the best elements of Peru are in the ascendant. Political dissensions are kept within the bounds of a strong opposition, and the future of the country depends upon this restraint being maintained and disorder being sternly discountenanced by all parties. Self-control, political generosity, and scrupulous administration of public funds and law are the lessons the Peruvians of to-day must learn and are learning. Twelve years have passed since the last revolution, and whilst there exists a strong opposition party, this is, as ever, to be looked upon as an adjunct of government, rather than an obstacle, and so far excessive bitterness or friction has not arisen.

The matters which mainly occupy the Government's attention are questions of internal development; and a strong policy has been entered upon for railway construction and for the inducing of foreign capital to invest in the exploitation of the natural resources of the country by judicious concessions and good regulations concerning lands, mines, and other matters of industrial enterprise. Education, and the betterment of the Indian population, are receiving considerable attention, as well as the hygienic improvement of the cities and villages. Abroad, the outstanding question with the body which represents their foreign creditors—the great group of international shareholders, with a directorate in London known as the Peruvian Corporation—has been subjected to an arrangement. Acute questions of boundary which have occurred with neighbouring republics are mostly under peaceable arrangement or arbitration, except that the rankling question with Chile, over the return of the provinces of Tacna and Arica, has not yet been solved.

The credit of the country abroad, which has suffered so severely in the past, is being re-established by the era of good government. It is recognised that the basis of national prosperity must be in the welfare of the country's inhabitants—whether white or indigenous—allied to the

development of the great natural resources ; and it is these matters which are occupying the attention of the Peru of to-day. The twentieth century opened well for the country, and the ship of State proceeds upon tranquil waters up to the present year of 1908. It remains to be seen if this favourable course is to be maintained, and this is mainly a question of political fairness and common-sense in the conduct of the affairs of state by the administrative class of the Republic.

The term of Dr Pardo reached its natural end, and the former Minister of Finance, Señor Augusto B. Leguía,¹ was elected President of the Republic, taking his place as such in September 1908. Señor Leguía, although opposed by a certain section of the community, which caused some slight disturbance of insurrectionary character, was, nevertheless, the man towards whom public opinion tended as fitted for the high position. Whilst he is essentially a business man, he has shown talent in administrative affairs, and the country has confidence in his ability. With the exception of small political disturbances and an acute frontier question with Ecuador and Chile, the country has remained at peace. To the foreign observer, the watchword for Peru should be: progress and impartial justice at home; patience and serenity abroad.

¹ See p. 267.

CHAPTER X

POLITICAL ADMINISTRATION AND DIVISIONS

Geographical position — Boundaries — Tacna and Arica — Area — Contour — Population — Departments and their resources — Provinces — Political organisation — Government — Laws — Foreigners — Public health and hygiene — Education — Religion — Language — Insignia — Benevolent institutions — Army and navy.

DURING our preliminary survey of Peru in a previous chapter, we shall have observed a certain valuable geographical condition which the country embodies. This is the access it enjoys to **both** the Pacific and Atlantic Oceans, a position unique among the whole of the South American States, except in the case of Colombia. This fact is not generally recollected in the knowledge of the geography of Peru abroad, for it is with the seaports upon the Pacific Coast that commerce with Europe and the United States is mainly carried on. But a glance at the map shows that by far the greatest part of the area of Peru lies to the east of the Andes, upon the system of navigable rivers —affluents of the Amazon—which penetrate Peru up to the foot of the Andes, so giving access and outlet to the territory by water to the Atlantic Coast at Pará, in Brazil. Indeed, the headwaters of the Amazon are navigable westwardly to a point distant in a direct line only some 250 miles from the Pacific Ocean—the Andes intervening. These navigable rivers are fully dealt with in a subsequent chapter. The Amazon is, of course, an international highway.

Peru is bounded on the west by the Pacific Ocean—the Peruvians say it is their kindest neighbour, in that it is not

always endeavouring to encroach upon Peruvian territory! To the north and north-west is the republic of Ecuador, but a large zone of land there is debatable ground claimed by both countries, and the ownership is at present under arbitration by the King of Spain. Colombia also bounds this region on the north, and also claims part of it. To the north, the east, and the north-east, lies the territory of Brazil, with which country there is also a question of boundary. To the east lies the republic of Bolivia, with a disputed zone, which has, however, been submitted to the arbitration of the president of Argentina. The southerly boundary of Peru is in reality formed by the valley of Camarones, which divides the Peruvian province of Tacna from the Chilian department of Tarapacá. It will be recollected that after the war a treaty was entered into between Chile and Peru, by which the former annexed Tarapacá and retained temporary possession of Tacna and Arica. This treaty was signed in 1883 and ratified in 1884, and a popular vote ought to have taken place in 1894 to decide finally into whose possession this territory should fall. This plebescite has not taken place, due to the failure of negotiations for bringing it about. The problem is not easy of solution, for Peru claims that only Peruvians should vote in the determination of the plebescite, whilst Chile asserts that the whole population should vote. The Peruvians do not agree to this, as they fear that "stuffing," or the introduction of Chilian voters for the occasion, would result, and the question remains at a dead-lock. But recently it appears that a better feeling is taking place between the two countries, and perhaps the near future may show an amicable settlement of this long-standing and bitter question.

Peruvian geographies give the area of Peru as about 700,000 square miles, but in view of unsettled boundaries it is difficult to give exact figures. The coast-line is some 1,400 miles in length, from the Ensenada of Santa Rosa, the northernmost point on the coast, to the Camarones valley, the southerly boundary of Tacna. The form of the country is very irregular, due to successive disputes and

arrangements of its inland boundaries. Some of the frontiers are natural ones — rivers, summits, or water-partings—others are artificial.

The three great natural zones into which the country is divided, as already described—of coast zone, *Sierra* or Andine region, and *Montaña* or river and forest region—take, as regards their surface or area, the proportion of the whole area of the country respectively, as 2, 5, and 13.

The contour of the country may be further graphically described by saying that if the Pacific Ocean were to rise 6,500 feet above its present level, more than three-fifths of the area would be submerged, leaving a longitudinal strip, situated at a distance of about 60 to 100 miles from the present coast-line, and of some 120 miles wide. This is the *Sierra*. If the sea rose higher, to 11,500 feet, only the higher tablelands would remain, and the lofty ranges. These are the *punas* and the *Cordilleras*. Did the ocean rise to 15,000 feet above its present level nothing would remain but isolated steppes—the very high plateaus, covered in their higher portion with perpetual snow, crowned with the ice-clad peaks.

Population.—The population of Peru is only known approximately, as there has been no enumeration of the whole of the inhabitants since 1876. The census of that year gave something under 3,000,000 souls, but this figure included the savage tribes of the forest region, or *Montaña*, a quantity impossible to estimate with any approach to exactitude, but which was calculated at 300,000. Of the 3,000,000, 50 per cent. belong to the American or indigenous race; 25 per cent. to the *Mestizos*, or mixture of white and indigenous; 15 per cent. to the white race, native and foreigners; 2 per cent. to the imported negro race; and the balance Asiatics, principally Chinamen, and to other mixed races.

Of the three natural zones of Peru, the population is distributed about as follows:—

Coast.	Sierra.	Montaña.
685,000	1,930,000	389,000

The density of the population in average terms throughout the country is taken at slightly over four per square mile, by which it will be seen how sparsely populated is this great region, which is something like thirteen times the size of England and Wales. As previously stated, the bulk of the white inhabitants have taken root upon the coast zone. They constitute the main element of wealth and progress. It is doubtful if the population is much increasing. However, estimates have been made of an increase to 3,550,000 since the census of 3,000,000 of 1876. The immigration is almost *nil* at present, and in spite of the fact that the native women—especially in the uplands—are prolific, the infant mortality is very great, due to a variety of causes. These are principally consequent upon the lack of good local government in the interior; absolute want of hygienic methods among the indigenes; poor food, and the abuse of alcohol among these. The traveller in these Sierra regions is much impressed by the large consumption of cane-rum, or *Aguardiente*, among the *Cholos* of the Sierra; and this in some regions is the ruination of the people.

Peru is divided into eighteen departments and two provinces, which with their area in square miles, and population according to the present estimate, are:—

Departments.	Area.	Population.
Piura . . .	16,825	154,080
Lambayeque . . .	4,614	93,070
Libertad . . .	10,206	188,200
Ancachs . . .	16,562	317,050
Lima . . .	13,310	250,000
Callao . . .	14	33,879
Ica . . .	8,718	68,220
Arequipa . . .	21,947	171,750
Moquegua (province)	5,550	31,920
Tacna . . .	12,590	38,000
Amazonas . . .	13,940	53,000
Carry forward		1,399,169

		Population.
Brought forward . . .		1,399,169
Departments.	Area.	
Cajamarca . . .	12,540	333,310
Huanuco . . .	14,024	108,980
Junin . . .	23,350	305,700
Huancavelica . . .	9,250	167,840
Ayacucho . . .	18,185	226,850
Apurimac . . .	8,187	133,000
Cuzco . . .	156,270	328,980
Puno . . .	41,200	403,000
Tumbez (province)	2,000	8,000
Loreto . . .	240,000	120,000
Total		<u>3,547,829</u>

Of the foregoing list Tumbez and Moquegua are provinces. Tacna and Arica are under Chilian occupation, as described.

The foregoing departments are divided into provinces ; a total of ninety-two, which are subdivided into districts, of which there are about eight hundred. A description of these departments and provinces will now be given, taking them in the natural grouping of Coast, Sierra, and Montaña, with a brief mention of their varying characteristics.

Region of the Pacific Coast beginning at the north :—

Department of Piura : five provinces as follows :—

Tumbez (Capital, Tumbez).—A port at the mouth of the river of same name. Products: tobacco and petroleum. Pizarro arrived in 1531.

Paita (Capital, Paita).—Fine bay and harbour ; cotton exports ; railway to Piura ; birthplace of Admiral Grau in 1838. Town, Sullana.

Piura.—Capital of the Department. Cotton cultivation. Towns: Catacaos, manufacturing Panama hats ; Sechura, salt and sulphur exports. Railway to Paita.

Ayabaca (Capital, Ayabaca).—Sierra province ; commerce with Loja in Ecuador.

Huancabamba (Capital, Huancabamba).—Trade with Jaen in Cajamarca ; quinine, etc.

Department of Lambayeque : two provinces :—

Lambayeque (Capital, Lambayeque).—Rice, sugar-cane, guano, from Lobos Islands off coast. Town, Ferreñafe.

Chiclayo.—Capital of Department. Rice, sugar-cane, hats. Railway to ports Pimentel and Eten.

Department of Libertad, with University, Bishop's See, and High Court of Justice. Ruins of the buildings of the time of the Chimus. Six provinces as follows:—

Pacasmayo (Capital, San Pedro).—Rice, sugar-cane, saddlery, coffee, cattle export, etc. Towns: Guadalupe, and port of Pacasmayo.

Trujillo.—Capital of the Department. Sugar-cane. Railway to Port Salaverry and Ascope.

Otuzco.—Sierra province. Gold and silver mines of Salpo.

Huamachuco.—Mining regions.

Santiago de Chuco.—Mining regions.

Pataz.—Upon the Marañon. Gold mines.

Department of Ancachs: seven provinces; Bishop's See and High Court; as follows:—

Santa (Capital, Casma seaport).—Chimbote port on fine bay of same name; railway to Suchiman. Other ports: Samanco and Huarmey.

Pallasca (Capital, Corongo).—Gold and silver mines; cattle; wool, textile fabrics.

Huaylas (Capital, Caraz, Yungay).—Macate, gold, silver, and coal mines; cereals and potatoes; situated in the valley of Huaylas; excellent climate at Yungay.

Huaraz.—Carahuaz, Recuay. Mines of silver, lead, copper, coal; cereals and other produce.

Pomabamba.—Eastern side of the Cordillera. Silver mines; high plateaus and valleys.

Huari.—Mines of silver, coal, gold; cattle, etc.

Cajatambo.—Silver mines; cattle.

Department of Lima: Capital, Lima, of the Republic, seat of the governing and judicial bodies, etc., as elsewhere described; six provinces as follows:—

Chancay (Capital, Huacho, seaport).—Hog-breeding and export of lard; sugar-cane, minerals.

Lima.—Sugar-cane ; cotton, textile fabrics. Inca ruins of Pachacamac.

Cañete.—Port ; cane culture and sugar.

Canta.—Sierra province. Cattle ; potatoes.

Huarochoiri.—Oroya railway ; silver, copper, coal mines ; smelting works of Casapalca.

Yauyos.—Mines and agriculture.

Province of Callao : Capital, port of same name, elsewhere described.

Department of Ica : three provinces.

Chincha (Capital, Chincha Alta).—Agriculture.

Pisco (Capital, Pisco).—Cotton ; sugar-cane, vineyards, fruit. Guano islands of Chincha off seaport.

Ica.—Vines and brandy ; Capital of the Department ; copper mines ; fine agricultural region.

Department of Arequipa : containing third city in importance of Peru, elsewhere described, with seven provinces.

Camaná (Capital, Camaná).—Cattle ; olive culture, sugar-cane ; mule-trains ; seaports of Lomas and Chala. Mica mines.

Islay (Capital, Mollendo).—Second port in Peru in importance, with railway to Bolivia, *viâ* Arequipa. Sugar-cane and cotton in Tambo valley.

Condesuyos (Capital, Chuquibamba).—Volcanic region ; gold mines ; agriculture ; wine.

Castilla.—In the Mages valley. Wine.

La Union.—Sierra province, on the river Ocoña. Gold mines ; sheep, etc.

Cailloma.—Silver mines.

Arequipa.—Capital of the Department same name ; cereals, vineyards, borax, hot springs.

Province of Moquegua : Capital of same name ; agriculture, wine, olives, brandy. Port of Ilo.

Department of Tacna : Peruvian temporary Capital, Locumba.

Tacna.—Chilian occupation. Railway from Arica.

Tarata (Capital, Candarave).

We now come to the departments which occupy the inter-Andine region ; as follows :—

Department of Amazonas, with Bishop's See. It contains the following three provinces:—Bongora, Chachapoyas, Luya; whose products are: sugar-cane, tobacco, gold mines. It is sparsely populated.

Department of Cajamarca, with seven provinces:—Jaen, Chota, Celendin, Cajamarca, Cajabamba, Hualgayoc, Contumaza; whose products are: tobacco, chocolate, cattle, gold, silver, copper, cereals, etc.

Department of Huánuco, with three provinces:—Huamalies, Dos de Mayo, Huánuco; whose products are: silver, gold, coal, cattle, agriculture, coffee, sugar.

Now comes the region of the rivers Mantaro and Apurimac, consisting of a vast number of Andine valleys and plateaus, generally with a dry, healthy, and agreeable climate, as follows:—

Department of Junin, with four provinces:—Cerro de Pasco, Tarma, Jauja, Huancayo; whose products are: silver, copper, coal, salt, cereals, cattle, sugar-cane, coffee, etc.

Department of Huancavelica, with four provinces:—Tayacaja, Angaraes, Huancavelica, Castrovirreña; whose resources and products are: quicksilver, thermal springs and baths, silver, copper, lead, cattle, etc.

Department of Ayacucho, with six provinces:—Huanta, Huamanga, La Mar, Cangallo, Lucanas, Parinacochas; whose products are: minerals of nickel, silver, alabaster, etc; woollen fabrics, filagree silver work; coffee, cocoa, cocaine, wheat, grapes, cattle, etc.

Department of Apurimac, with five provinces:—Andahuaylas, Abancay, Aymaraes, Antabamba, Cotabambas; whose products are: sugar-cane, cereals, cattle, gold and silver.

The region of the "Knot" of Cuzco embraces:—

Department of Cuzco, with twelve provinces:—Concepcion, Urubamba, Paucartambo, Calca, Anta, Cuzco, Paruro, Quispicanchis, Acomayo, Chumbivilcas, Canas, Canchis; whose products are: cocoa, cocaine, potatoes, cereals, cattle, gold, textile fabrics, etc.

Department of Puno, with seven provinces:—Carabaya, Sandia, Lampa, Huancané, Azangaro, Puno, Chucuito;

whose products and resources are: gold, silver, cattle, especially *llamas*, *vicuñas*, etc., wool, cheese, cocoa, coffee, *quinua*.

Lastly, we come to the region of the Amazon, with the huge Department of Loreto. This contains six provinces:—Bajo Amazonas, Alto Amazonas, Moyobamba, San Martín, Ucayali, Huallaga; whose products and resources are: india-rubber, salt, fish, straw hats, quinine, tobacco, tropical fruits, etc. The capital of this region, and the centre of the important river traffic, is the town and port of Iquitos.

The remarkable variety of products which Peru affords is demonstrated by the above—a variety due to the great differences of elevation encountered in the country.

Political Organisation.—How is this very extensive and varied region of Peru governed? The departments are administered by prefects; the provinces—a total of one hundred and one—by sub-prefects; and the districts—numbering seven hundred and ninety-eight—by petty authorities, termed *Gobernadores*, assisted by *Alcaldes*, the latter generally chosen from the Indian population. The form of government of Peru is that of an independent republic, in which all citizens are equal in law. The people are sovereign. They are represented by a body of senators and deputies, elected by direct vote. These representatives occupy the Chambers of Deputies and Senators respectively, the whole being known as the Congress, which body meets generally once a year, in Lima, from 28th July to 25th October, to transact the business of the nation. Congress constitutes the *Legislative* power. The *Executive* power consists of the president and first and second vice-presidents, who replace him in case of necessity. The despatch of business is effected by six ministers, who form the Cabinet. These functionaries are respectively ministers of the departments of the Interior, War and Marine, Foreign Affairs, Justice and Instruction, Finance, and Public Works. The president's acts have no effect without the signature of a minister. For the execution of the laws locally the prefects and other functionaries

mentioned are also responsible. The *Judicial* power is vested in the tribunals and magistrates. These are: the Supreme Court, whose seat is in the capital, Lima; and nine High Courts, in the capitals of the departments of Arequipa, Ayacucho, Cuzco, Cajamarca, Huaraz, Lima, Piura, Puno, and Trujillo. The Judges of first Instance reside in the capitals of the provinces, and the Justices of the Peace in the districts.

The machinery of government in Peru, as in most Spanish-American countries, is very well ordered theoretically, and were the laws always carried out, the general organisation would be excellent. That, however, is sometimes the weak point, which time and discipline must remedy. The political organisation is governed by the Constitution, as formed in 1860. The following clauses regarding individual guarantees and local government are extracted from Chapter IV. of the Constitution:—

Article 16.—The law protects honour and life against all unjust aggression; the penalty of death can only be applied for homicide qualified as premeditated murder.

Article 17.—There are not, and cannot be, slaves in the Republic.

Article 18.—No one can be arrested except upon the written warrant of a duly qualified judge, except if taken in *flagrante delicto*; and in all cases a person arrested must be brought before a magistrate within twenty-four hours after arrest. A copy of the warrant must be given to the accused if asked for.

Article 19.—The gaols are places for detention and not punishment. All severity is prohibited if not necessary to the custody of the prisoners.

Article 20.—No one can be exiled from the Republic, nor separated from his place of residence, except by a judicial sentence.

Article 21.—Everybody is at liberty to make use of the press for the publication of his writings without censorship, but under the responsibility laid down by the law.

Article 22.—The secrecy of correspondence is inviolate,

and no legal use can be made of letters which have been stolen.

Article 23.—Every one is at liberty to follow any trade, industry, or profession which is not against public morals, health, or security.

Article 24.—The nation guarantees the existence and diffusion of free primary education, and the support of public establishments for the sciences, arts, religion, and benevolence.

Article 25.—All who can give the guarantee of capacity and morality required by the law, are at liberty to teach and to direct educational establishments under the inspection of the authorities.

Article 26.—Property is inviolable, whether material, intellectual, literary, or artistic, and no one can be deprived of his own unless for causes of public utility, which have previously been proved and legally declared, and then only by indemnification and just valuation.

Article 27.—Useful discoveries and inventions are the exclusive property of their authors, unless these voluntarily cede them or sell the secret, or when it may be necessary for motives of public policy to expropriate them. The introducers of new inventions will enjoy the same privileges as the inventors for the time which is conceded in accordance with the law.

Article 28. — Any foreigner may acquire territorial property in the Republic in accordance with the law under precisely the same conditions and obligations as the Peruvian citizen.

Article 29.—All citizens have the right to associate peacefully, whether in public or private, so long as they do not disturb public order.

Article 30.—The right of petition may be exercised individually or collectively.

Article 31.—The domicile is inviolate ; no one can enter it without previously showing the written warrant of a judge or of the authorities charged with the maintaining of public order. The executors of the said warrant are obliged to give a copy of it when asked to do so.

Article 32.—The laws protect, and are obligatory equally to all. New laws may be established when circumstances show them to be required, but not for differentiation between persons.

Local government in the different departments is carried on by Departmental and District Councils. The function of these bodies is to regulate and administer the following branches of public service in their respective districts: Hygiene and Public Health, with power to prevent the sale of comestibles, liquors, medicine, etc., of bad quality; water supply, including also supply for irrigation; inspection and making of roads, etc.; adornment of towns; inspection of markets, slaughter-houses, etc.; public lighting; police; inspection of weights and measures; encouragement and support of scientific and industrial institutions, arts, etc. The District Councils have similar functions, but with special care of roads, bridges and schools. According to Article 10 of the law of 14th October 1892, foreigners are eligible as members of Municipal, District, and Provincial Councils.

The *Public Health* service has recently been well organised in Peru, under control of the Department of Fomento. It embodies two sections—hygiene and demography. Salaried medical officers reside in the capitals of the provinces, with medical jurisdiction over hospitals, prisons and benevolent institutions. A corps of sanitary officers control the seaports, under regulations adopted from the International Sanitary Convention held in Washington. There are three main sanitary stations—one at Payta, for vessels coming from the north; one at Callao, for vessels proceeding from the west; and a third at Ilo, for vessels from the south. Each station has a Clayton disinfecting apparatus for vessels and cargo, and in most of the principal ports similar appliances are provided. By this modern system the delays and obstacles of the former quarantine methods are avoided. Vaccination is obligatory, and performed gratis. Large sums are being spent for the improvement of drainage and water-supply systems throughout the country.

Education.—As regards instruction and education, these are obligatory. The Government are making strong efforts to augment primary education throughout the interior, and this is given free. The former amounts allotted by the State for the branch have been greatly increased, and the sum of two hundred and forty thousand pounds annually is now provided, or nearly one-tenth of the national revenue. The administration of primary education has been removed from the control of the municipalities and placed under that of the Government. The number of elementary schools so supported is 2,370, and although the new arrangements are only two or three years old, the average attendance is put down at 64 per cent., whilst that of the numerous private schools is given at 78 per cent. Secondary education is provided by 23 Government Colleges, distributed among the capitals of the departments. The heads of those are German or Belgian professors, engaged by the Government. The higher or university education is principally for the conferring of professional degrees. There are three universities in the provinces—Arequipa, Cuzco, and Trujillo—whilst in Lima is the famous old San Marcos University, which confers degrees in medicine as well as law. In addition to these it has Faculties of Theology, Mathematics, Physical and Natural Sciences, Philosophy, Letters, and Political Economy. This important seat of learning is autonomous, and outside Government influence.

Special instruction is also afforded in their various lines by the School of Arts and Trades; the Military School, under the management of French officers engaged for that purpose; the Naval School, from which cadets go abroad to spend some time on ships of foreign navies; the Engineering School, probably one of the most useful and important educational establishments of the country—here civil and mining engineers are trained under a good *régime*; the School of Agriculture, where technical and practical instruction are given. Thus it is seen that Peru is not neglecting the education of its citizens.

Religion.—The Constitution of Peru gives absolute political but not religious freedom, as the public exercise



LIMA : SCHOOL OF AGRICULTURE.

of religion other than Roman Catholic is forbidden. The English churches in Lima and Callao are, however, allowed to exist by courtesy or toleration, and are never molested. The interior religious organisation is formed by priests, or *curas*, controlled by the bishops of the various dioceses. These are nine in number. These priests are numerous, and form one of the principal features of the internal economy of the country. This refers to the region of the Sierra; for the Indians of the forest region are under no kind of religious, or, indeed, administrative control, except in a few cases. Religious matters are dealt with fully in a subsequent chapter.

Language.—The language of the country is Spanish—*Castellano*—but in the Sierra the bulk of the *Cholo* population speak their languages of Quechua and Aymará, whilst in the Montaña, the savage tribes speak their numerous and varied tongues. English is now beginning to be considered necessary to the upper-class Peruvian. It is taught in the higher schools, and has been somewhat readily acquired. French is very often known among the upper classes.

Insignia.—The national coat of arms shows a *llama*, a *quenar* tree, and a cornucopia. The flag is composed of three vertical stripes, of which the centre is white and the end ones red. The gold coin is stamped with the image of Atahualpa and the national arms.

Benevolent Institutions.—In nearly all the chief towns of the republic there are societies established for the gratuitous assistance of sick and destitute persons, for which rural and urban property was formerly set aside as revenue for their support. These are under the control of special boards, and the proceeds of the lottery go to help their funds—and this fact is adduced as an excuse for the existence of that public nuisance, the lottery. There are upwards of forty-five benevolent institutions, with an aggregate revenue of nearly a quarter of a million pounds. The Lima Benevolent Society is controlled by men of standing and known integrity in the capital. The Peruvians are a charitable people, and the custom of alms-giving is early

bred in them. There are numerous charitable institutions in Lima. As for the hospitals, there are several in Lima, some of them bearing the names of foreign colonies which established them, as the Italian Hospital, etc. The Lima Benevolent Society maintains three hospitals: for men, with accommodation for 1,000 patients; for women, with 480 beds; and a lying-in hospital. There is also a military hospital, and insane and orphan asylums.

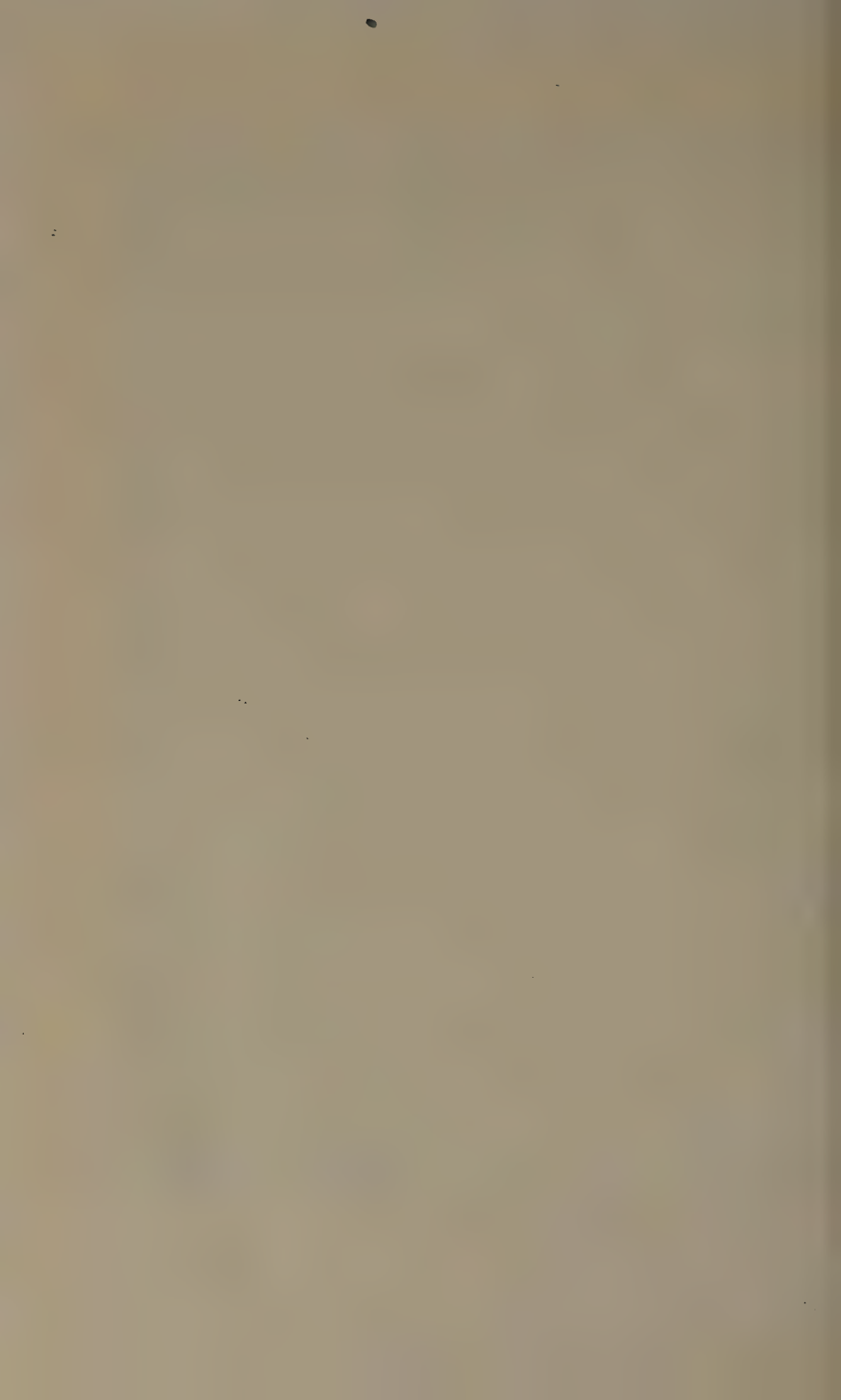
Army and Navy.—In 1896 Peru began to organise her army, calling in for that purpose French army officers, known as the French Military Mission, the head of which is ranked as a brigadier-general. These officers are under the direction of the Peruvian War Office, but wear their French military uniform. The effective force in peace times has been fixed at 4,000 men, including artillery, infantry and cavalry. The arm is the Mauser rifle, and the artillery has modern Schneider-Canet guns. Obligatory service is in force for all Peruvians from nineteen to fifty years of age. The standing army is formed of volunteers and conscripts, the latter, youths of nineteen years of age, chosen by lot from the available number. Three years are served in the infantry and four in the cavalry. A payment of fifty pounds exempts from service or passes to the reserves. There are at present 40,000 youths of nineteen available for drawing, and there are in addition two reserves. Peru possesses at present a small but well-drilled and well-equipped army. The bulk of the men are the Indians of the highlands, and they are noted for their qualities of endurance and obedience. A distinct body are the mounted police of about 2,156 men, for service in the departments of the interior.

The navy, which was completely destroyed during the Chilian war, is being slowly reconstructed. It consists at present of two cruisers, the *Admiral Grau* and *Colonel Bolognesi*, constructed in 1906 by Vickers at Barrow-in-Furness, of 3,200 tons displacement each, and 24 knots speed; the cruiser *Lima*, built at Kiel in 1880, of 1,790 tons and 14 knots; and three transports—the *Iquitos*,



THE PERUVIAN NAVY: CRUISER "ADMIRAL GRAU."

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formerly the British yacht *Veronica*, the *Constitution* and the *Chalaco*. There is also a naval school-ship and a training ship stationed at Callao, and a fleet of State river steamers is maintained upon the great waterways of the Amazon region.

CHAPTER XI

SOCIAL SYSTEM—INHABITANTS—ENVIRONMENT THE COAST ZONE

Three natural zones—Natural groupings of inhabitants—Whites *Mestizos*, Indians—Governing element—Peruvian character—Native and foreign enterprise—Business element—Republican principles—Undemocratic conditions—The *Cholos*—Peruvian oratory—The women of Peru—Good qualities—Race characteristics—Spanish origin—Titles—City of Lima—History and buildings—The Inquisition—Institutions—Newspapers—Literary attributes—Population—Railway connections—Environment—General impression—Callao—Coast region—Agricultural labourers—Slavery—Chinese—Negroes—*Cholos*—Trujillo—The *Chimus*—Arequipa.

JUST as the physical character of Peru is determined by the influence of the great mountain range which traverses it, so are the races which inhabit the country correspondingly grouped by nature. The three topographical and climatic zones, of coast, highlands, and forest, form, respectively, the abode of three varying kinds of peoples—the Peruvians of white race: the *Mestizos*, and *Cholo* Indians: and the forest Indians or savages.

The white Peruvians, the descendants of the Spaniards, are those in whose hands the government of the country is vested, and who principally hold the wealth of the community. There is not necessarily a hard and fast line between them and the class termed *Mestizos*, which latter are simply of mixed white and native race. It was but natural that the Spaniards should have intermingled freely with the women of the unprotesting race which they encountered on arriving in the country, and the

present governing race are their descendants. In many cases, of course, there are families of purely Spanish descent, as well as of mixed French, Italian, and other European stock.

This *Mestizo* race of Spanish-America has no counterpart in those portions of the New World inhabited by the Anglo-Saxon race. Probably the indigenous people of South and Central America and Mexico, by reason of the higher civilisation they had developed, were more capable of assimilating with Europeans. The Indians of North America die out; those of Spanish-America are the basis of its population, and will be assimilated, but not exterminated.

The governing Peruvians of to-day, then, are a civilised white race, enjoying self-government in accordance with the principles laid down by European civilisation. The form and machinery of government is good, and the laws excellent. If defects are observable, it is because these laws are not always carried out—a defect to be found in all American republics, north or south. But it is not to be supposed that there is any element of insecurity of property or life in Peru. On the contrary, the people are law-abiding and well-disposed as a whole, and the foreigner may sojourn in the cities, or travel in the country, without encountering more risk of fraud or violence than in the United States or Europe. The people of the upper class are courteous and hospitable; the Indian population docile and respectful. If a rowdy element is encountered, it is probably a foreign one.

As to the revolutionary habit in Peru, it seems that a time of change has now arrived. The desire for peace and order is strong among all classes of the community, and a tendency exists towards work and development. Of course the natural disposition of Spanish-Americans is to be fond of the comforts and conveniences of their cities, and to regard a journey to the interior as a hardship to be avoided if possible. The country contains unbounded possibilities for development in its natural resources, but the Peruvians do not yet reach out much

to grasp these, and development is being carried out principally by the foreigner, whether it be in commerce, railways, or mines. It would be unjust, however, to deny that there is an enterprising element among Peruvians, and there are successful national enterprises in operation.

The Peruvian has preferred, as a rule, to follow the higher, or non-producing avocations of politician, lawyer, soldier, etc., and this is in accord with a certain element innate in the Spaniard, which tends to despise work which cannot be performed in the garb of frock-coat and silk hat. In the lower middle class this tendency is shown in the great number of young men who serve in drapers' and other shops and stores, and who might be much better employed—according to Anglo-Saxon notions—in doing something on the soil. There is something pitiful in seeing able-bodied young men selling French haberdashery and half-yards of ribbon, when the interior of the country calls so urgently for development. However, it must be borne in mind in making these comments, that the Spanish-American is not addicted to hard manual labour, nor is he a votary of the "strenuous life" as interpreted by manufacturing nations. His theory of existence does not require him, like the North American, to keep his nose eternally down to the grindstone of commercial striving, for pleasure enters much more into his disposition. It would be unphilosophical to condemn this attitude altogether, and nature undoubtedly has some object in view in preserving and developing a race not given over to the greed of commerce.

It is hardly necessary to enlarge on the fact that the term "Republic" seems much of a misnomer to the foreign observer in Spanish-American countries. They are republics only in name as regards public things, for the wealth of the community is in the hands of a few, and education confined to those who can afford to acquire it. So that a wealthy and cultured upper class in Peru stands in marked contiguity and contrast to the great bulk of indigenous poor, and Parisian attire rubs shoulders with the sandalled Indian in the streets of



THE COAST ZONE: ASPECT OF CULTIVATED LANDS.

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the capital. It is true, however, that present governments are making stronger efforts than ever before to bring the Indian population into line with civilisation and to instruct them.¹ It is a difficult task. Four centuries of social and religious oppression are not easily remedied, and all that can be expected for some generations will be to make of the *Cholo* and his woman useful and intelligent labourers, to better their hygienic surroundings, and to ease off the burden of priest and employer as much as possible. The *Cholo* is a valuable member of the community, with many good traits; and it is safe to say that without him the industries of the country would come to a standstill.

The educated Peruvian (and, indeed, the uneducated) is eloquent; his speeches in public teem with classical and philosophical allusions and enthusiastic similes, and striving after effect is ever an underlying characteristic. In these respects he stands in much contrast to the Englishman or North American; but he is not blinded by vanity, and generally recognises and strives to follow the good points of other countries. The British character, for example, is ever esteemed in Peru—"An Englishman always does more than he says," is their estimate of the British, and this embodies a good deal.

The Peruvian woman of the upper class is a charming figure in the pleasing social life of Peruvian cities. Intelligent and vivacious, yet modest and decorous, she has much beauty of face and form; the gift of Spanish ancestors and the result of breeding and culture. She is soft, refined, and lovable, a good wife and mother, and preserves those true traits of femininity which women in some other countries of America pretend to think superfluous—a pretence which Nature, in the long run, will have none of. She is fond of dress on occasions, like other women, but does not adopt the habit of exercise or outdoor life of the Anglo-Saxon girl. She has been greatly moulded by her religion, which exercises a power-

¹ As shown in the preceding chapter under *Education*.

ful influence upon her, and she is a devout attendant at her favourite temples. If the upper class women have these good traits, the lower are, in their sphere, also of praiseworthy qualities, being patient, respectful, and generally hard-working; making the best of their poverty and often hard circumstance; and over all, trusting in the religion which has been so strongly engrafted upon the race.

The Peruvians of the upper class differ little in physiognomy and stature from Europeans. The complexion of the people of Lima and other coast cities is generally pallid, due to the equable climate of the coast region—a marked difference to the conditions of the uplands, as later described. Indeed, pallor is considered a mark of beauty among Lima ladies. It denotes a minimum, or lack of the aboriginal strain in the owner's composition; for distinctions of caste are strong, and the dwellers of coast cities profess to look down upon the *Serranos*, or dwellers of the upland regions. All parts of Spain furnished the progenitors of the present-day Peruvians—Basque, Catalonian, Galician, Andalusian, and Castilian names being encountered freely among them. During the three centuries of Spanish-Colonial rule, a great many Spaniards arrived in Peru, and brought or acquired wealth, taking root in the coast and, in less degree, the interior towns. They were principally merchants and officials, although a few descendants bear the name of the early conquerors. The titles of nobility which Spain—as a kind of pacificatory measure—conferred on some of the most wealthy and prominent of the colonists fell into disuse when the republic was established, and at the present day the Peruvian citizens have no designation of this nature. But, like many people under republican form of government, they are quite fond of distinctions, and his professional title, when he bears one, is always kept in mind in addressing the Peruvian gentleman, in the Spanish fashion. Thus a man is Mr (Señor) Doctor, Mr Minister, Mr Solicitor, Mr Engineer, etc. The large number of men among the upper class who hold degrees at first



LIMA CATHEDRAL.

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arrests the foreigner's notice. He hears men on all sides addressed as "Doctor"—whether it be of medicine, laws, divinity or science. The military titles also seem numerous, although, apparently, these are less sought after than formerly, for the soldier's profession becomes far less prominent as civil and industrial development go forward, and this is an advantageous circumstance. The Peruvians are a strongly sentimental race, and this characteristic is marked in amorous matters. The smaller newspapers and journals often contain numerous love-verses, which at times are of a somewhat neurotic character. But these pleasure-loving people do not lack bravery, as their heroic defence of their capital against the Chilians showed, and to-day they are fiery and jealous to the extreme on points of honour, or trespassed rights and dignity, and there is no doubt that they would make a brave stand against any foreign foe. Duelling is still in force among them.

The city of Lima, the capital of the republic, is picturesque and quaint, and the foreigner may live there in comfort and serenity. Lima is one of the premier cities of South America, and was the main centre of the early Spanish power, and seat of the viceroys. It was established by Pizarro in 1535, and was called "*Ciudad de los Reyes*," or "City of the Kings," in honour of the Spanish sovereigns Juana and Charles V. Later it was called "Lima," a corruption of the name of the river Rimac, which flows through it. The foundations of the Cathedral were laid by Pizarro in 1535, but the building was not consecrated for some ninety years afterwards. The two great towers which stand up above the surrounding buildings when seen from afar, were built during the term of the viceroy Taboada in 1795, the former superstructure having suffered by the devastating earthquake of 1746, when the city was almost reduced to ruins.

The city is built on the usual Spanish-American plan of parallel and cross streets, with a large central *plaza*. The Cathedral occupies one side of this *plaza*, whilst the National Palace, where the various Departments of State

transact their business, extends along another, with clubs, shops, and other buildings on the adjoining sides. The *plaza* is beautifully planted with flowers and palms, and is enlivened on various days of the week by the playing of military or municipal bands, to whose enjoyment the mild and rainless climate lends almost perpetual occasion. Lima is a city of many churches and convents, and it was, and indeed still is, a stronghold of Roman Catholicism.

There are numerous lesser squares, generally prettily planted with shrubs, and the avenues which surround the city are broad and pleasant. There are a number of fine monuments to native heroes and others in different parts of the city. Among these are: the marble statue to Columbus; the bronze statue of Bolivar, with bas-reliefs upon the base representing the battles of Junin and Ayacucho—the overthrow of Spain in South America; the "*Second of May*" monument, commemorating the combat with the Spanish squadron at Callao in 1866, with bronze statues representing Peru and her allies at that time—Chile, Ecuador, and Bolivia; the Bolnesi monument, in memory of the terrible combat on the Morro of Arica during the Chilian war; and the monument to San Martin, representing that famous general proclaiming the independence of Peru. All these monuments are handsome and costly structures of marble and bronze, and in some cases they have served as models for similar monuments in other Spanish-American cities.

The public buildings of Lima are, in some cases, handsome structures, although the poverty of the country has not permitted much outlay upon these recently. In all Spanish-American cities there is a tendency to erect showy structures of cement and stucco, rather than solid, enduring edifices of stone. And yet the early Peruvians—the Incas—raised temples which might last for ever. Also, the old Spanish architecture of Lima houses is often exceedingly picturesque and handsome, and these examples are wisely being preserved. A modern work is the Exposition Park, with its buildings and the handsome *paseo*, or promenade of Colon, at the head of which the



LIMA : THE PLAZA AND A MILITARY PROCESSION.

Colombus statue is situated. The park contains shady avenues of tropical trees, and in the buildings are the historical museum, the picture gallery of the viceroys, and other matters. This *paseo*, or avenue, where the society of Lima gathers on certain days when the band plays—for it is the fashionable resort—is half a kilometer in length, with gardens and statuary running down the centre. This avenue is considered to be one of the finest in South America.

Picturesque watering-places with luxurious houses and gardens are within a few miles of Lima, reached by electric railway. The principal of these are Miraflores, Barranco, and Chorillos. These summer resorts are healthful and pleasing, enjoying the cool breezes of the Pacific.

Lima is the seat of Congress, and the residence of the chief political and judicial bodies and courts, as also the seat of the famous University of San Marcos, the oldest in South America. Among the scientific institutions of Lima the *Geographical Society* takes high rank. The society was established in 1888, and counts upon Government financial support. It carries on the important work of encouraging geographical study in Peru; of sending out exploratory parties to the little-known regions; and in general of advancing scientific development in Peruvian geography, archæology, climatology, and other matters. It issues quarterly bulletins devoted to its work, which contain valuable matter, and which have become known in European and American scientific centres. The *Historical Institute* is another and newly-formed centre, which also shows the desire for scientific advance in Lima. This institution investigates the large field of the prehistoric times and races of Peru, and correlates data and writings thereof, as also of colonial and modern times. It includes a museum. The *Athenæum* is an institution which takes a leading part in the intellectual life of the country. It was founded in 1877 as a literary club. The *School of Engineers* has been described elsewhere. It is kept up by the revenue afforded from taxes on mining properties throughout the country. It is to the credit of young

Peruvians that they make fair engineers, and the Government has adopted the plan of sending these out to make studies of the various mining regions, so that more accurate knowledge of the country's resources is being obtained. Other institutions are, the *Society of Engineers*, with an excellent building, library, and large membership; the National *Societies of Industry*, of *Mining*, and of *Agriculture*; the National Academy of *Medicine*; School of *Agriculture*; *Military* and *Naval* Schools; School of *Commerce*; *Chamber of Commerce*; *Stock Exchange*; *Public Libraries*, elsewhere described. The *Mint* is one of the foremost establishments of this nature in South America; the *Fire Companies*, some eight in number, both native and formed among the Italian, French, and British colonies; the *Markets*, four in number, one of which is a splendid and spacious building, just completed; *theatres*, of which there are two, seating two thousand and one thousand four hundred persons respectively. These are inadequate, and a new theatre is under construction. Bull-fighting is not prohibited in Lima, and the *bull-ring* accommodates eight thousand spectators, being one of the largest in the world. Cock-fighting is also a popular sport among the lower classes. The *hippodrome* and *racecourse* is a finely laid out place, and a great centre of attraction in the season.

There are several first-class clubs in Lima, all of which admit foreigners to membership. Among them are the *National*, occupying first place, the *Union*, the *Phoenix* (British), the *Italian Club*, the *Spanish Casino*, and the *Cercle Français*.

There is a strong scientific and literary trend in the Peruvian character, which will assuredly develop and become of value to their continent as time goes on. Indeed Lima is a storehouse of literary tradition and culture, superior probably to any other capital on that continent, and these matters form valuable assets which will be more appreciated when the continent has become more closely knit together. The Peruvians speak, probably, the best and most pleasing Spanish of all these countries. It is in marked contrast to the somewhat chopped and brusque



Photo]

LIMA: VIEW OF THE POORER QUARTER AND MARKET BOOTHS.

[N. P. Edwards

—if virile—method of speech and writing of their neighbours, the Chilians, and resembles more the Spanish of the Mexican upper class.

The Peruvians have been writers and poets ever since the time of the viceroys, notwithstanding the crushing tendency of the Inquisition, and, indeed, the early Peruvians—the Quechuas and Incas—were of imaginative and sentimental character; which qualities still remain to a certain extent among their descendants, the *Cholos* and Quechuas of to-day.

Lima possessed a public library, founded in 1822, which was considered to be among the foremost in Spanish-America. It was ruthlessly damaged by the Chilians during their occupation, but was again brought together by the Peruvian man of letters, Ricardo Palma, and to-day is a most valuable institution.

In any mention of science and literature of Peru the name of Antonio Raymondi must not be omitted. An Italian by birth, he devoted his life to the surveying and description of Peru, and his works upon its natural history, mineralogy, etc., as indeed his maps, are the most complete sources of information.

There are various newspapers published in Lima. Foremost among these is the *Comercio*, established in 1839. What the *Times* is for Great Britain, the *Comercio* is for Peru. This paper has ever upheld public liberty, and striven for the progress of the country. It worked for the abolition of negro slavery, and this was brought to an end in 1855. It also upheld the rights of the Indians, and has been instrumental in their betterment, in a large degree. The spirit of tolerance and wisdom displayed in its columns have gained the confidence of the people, and the organ is one of which Peru is justly proud. Two, and sometimes three editions are published daily, containing the latest telegraphic despatches from other parts of the world. Whilst it is accurate and impartial in its renderings of news, these items which refer to British or European matters are sometimes tinged with North American rendering or prejudice, due to the New York news service.

Next in importance is the *Prensa*, a new and enterprising morning and evening paper, full of news and articles of home and foreign matter. Both papers are, in their Sunday editions, well illustrated, and the machinery which produces the impression is of the latest type. There are several other good daily papers published in Lima, reflecting various shades of political or social thought and opinion, with two weekly illustrated papers of considerable merit. In addition to these there are some fifteen weekly or monthly publications of the various scientific and commercial bodies and institutions, representing geography, medicine, law, mining, engineering, education, commerce, etc. In nearly all the principal towns of the interior one or more newspapers are published, especially in Arequipa, Trujillo, Cuzco, Iquitos, etc., giving a total of two hundred newspapers published in Peru. As stated, the principal among these papers contain much useful matter: the foreign news received daily by cable, and scientific or descriptive articles. They are, in fact, the greatest disseminators of knowledge the country possesses, and the small shopkeeper and petty official in remote interior villages draws his breath of the outside world in his perusal of these organs — pounced upon eagerly, what time the weekly steamer, touching at coast ports, permits the lagging rural Indian postman to deposit his heavy mail-pack in the primitive trans-Cordilleran post-office.

The present population of Lima is 140,000 inhabitants. It is connected with the outside world, as elsewhere described, by steamer lines to Europe, and to American ports, from Callao, etc. This, the third port in importance on the whole Pacific Coast (after San Francisco and Valparaiso), is about 8 miles from Lima, connected with the capital by two steam railways and two electric lines, which latter are actuated by a hydro-electric generating station upon the river Rimac, near at hand. From Lima the famous Oroya railway ascends the Andes, rising to an elevation of 15,640 feet at the summit of the Cordillera. Railway lines also connect the city with several watering-places on the coast, as



Photo

PART OF CALLAO.

[*N. P. Edwards.*

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Miraflores, Barranco, Chorillos, where fine residences exist, in a delightful climate, as before described.

The provisioning of the population is provided by supplies which come in by vessel from coast ports, and the railways, and by what is grown in the extensive *campiña*, or cultivated lands which surround the city, irrigated from the Rimac. The population is increasing, and the price of food has been rising, and this must be met by the tapping of further interior agricultural valleys by new railways.

Lima and its inhabitants remain as a pleasing picture in the traveller's mind. The *patios*, balconies, barred windows, and generally quaint façades of the buildings—a chapter in stone from old Spain—are restful and interesting. A certain air of antiquity and romance pervades the quiet streets—the mark of time and tradition. Let the Peruvian and the beautiful Limeña not banish this tranquil life and peaceful atmosphere. Some may deem it antiquated and call for the shriek of factory whistle, the overalled workman, and the daily usury of the business city, but the experienced traveller knows that true civilisation is not in these things.

The port of Callao is an historic old place. It has been the scene of successive bombardments: by the liberators from Chile, the Spanish squadron, the depredations of buccaneering expeditions from Europe, the Chilian invaders. It has been wiped out by earthquake and tidal wave, and showered with revolutionary bullets. Ships from all quarters of the world have directed their prows thither, and seafaring men of many races have trod its streets. It is one of the most important maritime centres upon the whole vast coast washed by the Pacific Ocean, from Alaska to Patagonia, and its geographical position, it is not rash to predict, assures it a busy future in the coming history of that part of the world. The population of the city at present is some 30,000, of which one-third are foreigners. The port has a good system of wharves and docks, which cost some two million pounds to construct, and which permit the largest ocean-going steamers on the

coast to come alongside. About one thousand vessels, with a total tonnage of about two and one quarter million tons, entering and clearing combined, represents approximately the bulk of annual maritime commerce in recent years.

Along the coast zone exist seaports, towns, and plantations, generally separated by long stretches of sandy desert, and in communication with each other only by means of the "silent highway," and the steamers which ply thereon. The labourers on the sugar and cotton estates were, until the abolition of slavery in 1855, negroes, and, indeed, largely remain so, although they are no longer imported. After that period great numbers of Chinese coolies were brought in, and in many cases were treated with great cruelty. Now, however, these matters are much improved, and they work under a voluntary contract, with proper hours and fixed wages. Large importations of Chinese have recently been made, but it is very doubtful if they are desirable citizens. The native Peruvian Indian or *Cholo* is superior in most respects to the yellow or black imported races, and a wise administrative system will foster his welfare and multiplication.

The second city on the coast in importance to Lima is Trujillo, some 300 miles from the capital northwardly. Trujillo was established by Pizarro, and so named by him in memory of his native place. It is situated in the Chimu valley, which takes its name from the Chimu, a powerful and partly civilised people who inhabited that region, and who were contemporaneous with the Incas, by whom they were conquered. Numerous and extensive ruins attest the greatness of the Chimu, and quantities of their pottery, textile fabrics, weapons, objects of art, etc., have been found and preserved. Trujillo is, like Lima, of quaint, old-world appearance, but not of much importance commercially. It enjoys an excellent climate, and is surrounded by cultivated fields, whilst upon the western flank of the mountains farther inland are valuable mines. The city is connected with the seaport of Salaverry by railway, and other short lines communicate with the fertile valleys of the neighbourhood, and the large sugar estates



DISTANT VIEW OF AREQUIPA AND THE MISTI VOLCANO.

which exist therein. Its inhabitants are largely descendants of the Spaniards, and the upper class and wealthy land-owners are of a somewhat exclusive character—prone to cling to old tradition, yet hospitable and intelligent withal. There is but little movement, either social or commercial, but the city and its surroundings embody great possibilities, and there is no doubt that considerable development awaits it.

Arequipa, the attractive city at the base of the Misti, comes second or third in importance to Lima. The people of Arequipa prefer to consider their city as within the coast zone, and do not class it with the less highly considered *Serranos* of the uplands, notwithstanding its elevation of 7,850 feet above sea-level, and 75 miles from the seaport. The climate of Arequipa is exhilarating, and the skies glorious. The buildings are chiefly made of white volcanic stone, which lends itself readily to the builder's chisel, and gives a well-constructed appearance to the streets. During its past history Arequipa has been severely punished by earthquake shocks, and, indeed, the volcanic region in which it is situated renders it liable to these. The city is surrounded by a broad *campiña*, or cultivated plain, and it is an important commercial and social centre. Its inhabitants are of similar race to those of Lima and Trujillo, but from its proximity to the uplands the indigenous race and blood is more in evidence. The people are of simple and hospitable character, and the women handsome, with more colour than their sisters of Lima, due to the tonic breezes of their environment. Arequipa was one of the chief strongholds of Roman Catholicism, and, indeed, it is still so, save that it is now the fashion throughout the whole of Peru to decry fanaticism, and welcome toleration in religious thought. The railway which ascends from the coast, at the port of Mollendo, unites the city with the outside world, and continues upward to Lake Titicaca, Puno, and so taps the territory and commerce of Bolivia. Arequipa, with its bright skies and invigorating air, handsome cathedral and *plaza*, and characteristic inhabitants, leaves a pleasing impression upon the mind of the traveller who has sojourned there.

CHAPTER XII

SOCIAL SYSTEM ; INHABITANTS ; ENVIRONMENT

(continued)

THE UPLANDS, OR SIERRA

The *Serranos*—Characteristics—Climate—Andine cities—Elevations above sea-level—Descent and language—The Quechuas—The *Cholos*—Customs—Inca *régime*—Distrust of whites—Former population—Decrease—Small holdings—Industries—*Andenes*—Religion—Alcohol—Inca customs—Descendants—Conditions of life among the *Serranos*—Roads—Cities—*Plazas*—Society and social life—Carnival time—Caste and colour line—Clothing—Desire for knowledge—Peruvian hospitality.

IN accordance with the plan we have followed, of considering separately the three natural topographical and racial groupings of Peru, we now come to the people of the high valleys and plateaus of the Andes—the *Serranos*, as they are termed, in contradistinction to the inhabitants of the littoral. Here we still find the Peruvians of white descent—more or less mixed with the original race, and, consequently, of the *Mestizo* type—the dominating and administrative class of these regions. They are a hardier and more active people—if less intellectual—than the lowlanders, and this is due to the difference of their environment, climate, and topography, as before remarked. Instead of a mild and equable temperature, they have to encounter brusque changes of season—cold, rain and snow at times. But the invigorating air, and great expanses of rugged country, give them the difference ever apparent between highlanders and lowlanders. Typical cities of the Andes, with their altitudes and distances from Lima, the capital, are as follows:—

Cities.	Altitudes in feet.	Distance from Lima in miles.
Cerro de Pasco . . .	14,380	174
Puno	12,645	825
Huancavelica . . .	12,530	219
Cuzco	11,440	567
Huaraz	9,930	192
Cajamarca	9,440	474
Ayacucho	9,216	315
Abancay	8,060	471
Arequipa	7,850	666

It will be observed by the above figures that the elevation above sea-level of some of these large towns is very considerable. Nevertheless, some of them, as Cuzco, Huaraz, Cajamarca, etc., are the centres of some of the most abundantly populated districts.

The people of pure Spanish blood in these upland communities are few, relatively, for in the course of time they have become so intermingled with the original inhabitants that they now form the real *Mestizos*, or people of mixed race. But they are, to all intents and purposes, as much Spanish-Americans as the dwellers of the littoral provinces, their language being Spanish, and their customs principally of similar origin. They are a well-meaning class, desirous of progress and betterment, but kept backward by the isolation of their position, and the poverty of the country, and low standard of living consequent thereon.

But the main bulk of the population of these regions is formed by the original people who constituted the communities of the Inca empire—the Quechuas and Aymaras. Whilst in general terminology these are called *Indians*, they must not be confounded with the savage tribes of the forest, from which they are distinct in every respect. They are, in addition, generally known as *Cholos*, or *Cholo-Indians*. They have, of course, absolutely nothing in common with the imported negroes of the coast, and are not necessarily dark-skinned—their complexion sometimes being relatively light—although they are beardless. They are strong and hardy in constitution, and are much sought

after as mining labourers, having a natural aptitude for this work. The mining regions, in some cases, are situated at very high elevations, from 11,000 to 17,000 feet, or more, and in the greatly rarefied air of such altitudes none but the actual sons of the soil—who have paid nature the homage of being born there—can endure the hard physical exertion which mining demands.

The history of these people is a chequered and terrible one. At the time of the Inca empire they lived in a condition of happy and contented enjoyment of the fruits of their toil—a quiet, pastoral life, ruled by beneficent laws and monarchs who had their welfare at heart in a manner such as has never been carried out among the subjects or citizens of any Christian nation. They inhabited their glorious uplands, wresting from nature, with pleasurable toil, the means of their simple existence, until—in the inexplicable plan of nature, which ever demands strife and change—Spaniards came sailing round the world, and substituted for that peaceful *régime* battle and bloodshed, and long and terrible oppression. A resulting fear of the invading white man inspired the distrust which to-day is one of their dominant characteristics—Spain's legacy in the Andes. This has induced a feeling of despair, which is imprinted on their melancholy countenances, and in the passive resistance which has become their habitual attitude towards progress and the administration of the republic. But it would not be fair to cast the onus of this distrust upon the Spaniards alone, for the *Cholos* have been abused and oppressed by the Peruvians of the republic, almost up to the present day. In times of revolutionary war their goods have been commandeered, and themselves made to serve as soldiers in strife in which they had no interest, whilst in times of peace they have been considered an easy subject for spoliation by the petty authorities and the wealthier *Mestizo* class.

The population of these regions in prehispanic days was very considerable. The destroying tendency of the Spanish rule is indicated by the fact that the Viceroy Toledo, in 1575, numbered eight million Indians, exclusive



GROUP OF MESTIZOS AND CHOLOS.

of the savages of the forests, whilst at the close of the Spanish *régime* the whole population of the country only numbered about a million and a quarter. At present it is calculated that the number of the *Cholo-Indians* of the Andine regions is something under two millions. None of these calculations are quite reliable, but the fact remains that the country was well populated in pre-Colombian times, and that great decimation took place during the epoch of Pizarro and the viceroys, whilst internal feuds and the Chilian war accounted for a great many more deaths. High mortality, moreover, was brought about from misery and privation consequent upon wars. To-day the population tends slowly to increase, but infant mortality among the *Cholos* is very heavy, due to the wretched and insanitary condition of their life, added to the rigours of the climate on the high plateaus; which latter, however, would not be an evil were the standard of life higher.

The poor *Cholo* has retained one fortunate condition from the civilisation of his Inca forbears—he is an independent landholder. The small holding, or *chacara*, which he has wrested from nature's chaos of rocks and ravines on the Andine slopes is his own; no one can dispossess him of it, and it affords him sufficient crop of *maiz*, potatoes, and, in places, *alfalfa*, to keep him and those dependent upon him. He is often, in addition, the owner of herds of *llamas*, *alpacas*, or sheep and goats, and from their wool he and his woman spin, and weave with their primitive looms, the "tweeds"—for of this nature is the native cloth—and white hat, which are his garments. These small holdings have been made in the most inaccessible places in many cases, by clearing away rocks and banking up the ground on the lower side in a similar way to that in which the *andenés*, or old cultivated terraces of the Inca period, were formed, and which still remain and excite the traveller's notice throughout the whole Andine region.

Indeed, to the rough, topographical conditions and difficult environment of these small holdings is due the

Cholos' undisputed possession, in the first instance, thereof. Had they existed in more favourable situations they would have been annexed long ago, first by the Spanish landholders, and then by the owners of large *haciendas* under the republic, or taken by the petty authorities under one or another pretext. It is again an instance of nature protecting her progeny against the ravages of their own kind. The laws of the republic now forbid these small holdings to be alienated from the *Cholos*; a wise measure, tending to preserve this useful peasant class.

The *andenes*, as the terraced fields which cover the hill-slopes of the Andine region are termed, are worthy of detailed description. They exist in almost every valley, extending upwards from the coast and the foothills to elevations of 12,000 feet, and even 16,000 feet or more, covering the slopes even in the most inaccessible situations and rigorous altitudes. From some high saddle or summit whence the surrounding horizon is visible, the observer notes a curious chequered or rippled appearance upon the flanks of the ridges, as far as the eye can reach, from the floor of the valleys up to the precipitous rock escarpments. They are the *andenes*; small terraces, one after the other, embanked on the lower sides with stone walls, like a series of irregular steps, where the soil has been collected and cultivated. The great number of these small holdings in every direction throughout the Peruvian Sierra has given rise to the supposition that a numerous population inhabited the Andes in prehistoric times—estimates even of ninety million inhabitants having been made. But this is fabulous, although it is evident that a numerous people must have formed and cultivated these remarkable terraces, of whom the present population are only a residue.

Adjacent to these valleys, especially in certain districts, as upon the Upper Marañon,¹ are groups of extensive ruins of habitations, as well as of burying-

¹ Visited by the author and described before the Royal Geographical Society.



MESTIZO—CHOLOS OF THE SIERRA.

places, known as *huacas* — often containing mummies — and of castles and fortresses. These latter often command the heads of valleys and defiles, and they go to show that the former inhabitants must have dwelt as separate groups or communities under the leadership of some chief — probably in pre-Inca times. These *andenes*, as the Spaniards termed the terraces when they conquered Peru, may have given rise, it has been surmised, to the name of the Andes ; but this probably is not correct, the real derivation undoubtedly coming from the name of the *Antis* — a tribe which inhabited the snow-covered Cordillera region, which was termed by the Incas *Anti-suyu*. This name, in Quechua, signifies “copper-bearing,” and copper was extensively used by the Incas.

The *Cholo*, then, provides for his wants, and he is quite independent — when allowed to be so — of the governing race. He asks nothing from civilisation, and indeed this has, so far, brought him only two things — the superstitious part of the Roman Catholic religion, and alcohol ! The one has failed to improve his mind — the other tends to ruin his body.

At Fair times, and on the numerous Church feast-days, the *Cholos* and their women flock into the towns to buy, sell, drink, and indulge in religious exercises. With their bright-hued blankets and *ponchos* — generally made by themselves — they lend colour and interest to the scene. And the priests — ha ! the priests ! — this is the time of their harvest, and the *Cholos* are the inexhaustible supply whence they draw fees, tithes, and offerings. For the *Cholo* nature has been most susceptible to the rites and representations with which Roman Catholicism is interpreted among them. They all bear Spanish names — Christian and surname — and each has his patron saint : and they must be considered a civilised race.

As stated, these people are the descendants of the Incas, or rather of the Quechuas and Aymaras, who formed the population of the Inca empire, for of the Inca line there are no descendants whatever left. The Incas were a royal line, and whilst their members were more or less

numerous, owing to the polygamy customary to them, the irregular descendants were not recognised as legitimate Incas, the real line of succession having been preserved by the progeny of the marriage of the reigning Inca with his own sister. The illegitimate offspring naturally intermarried with the common people, and were merged into these again. In a previous chapter something of the past history and conditions of the Incas, and the population under their rule, have been described, as also their structures—temples, palaces, and habitations—the ruins of which are encountered to-day along these vast uplands, where the *Cholo* feeds his flock, and lives his remote and melancholy existence. In marked contrast are some of these beautiful ruins to the wretched habitations of the present occupiers of the land.

The *Cholo - Indians* of the uplands are, then, miners, shepherds, and agriculturalists. In tending their flocks, and in the breeding and domestication of the *llama*, they are remarkably expert, and their patience and endurance arouse the interest of the traveller who sojourns among them. They have many good qualities, which have been unable yet to expand. The true policy of the administrations which govern them must be towards bettering them and causing them to multiply, for, apart from motives of humanity, they are one of the country's most valuable human assets. If they fail, and become exterminated, a large part of the uplands and higher valleys of the Andes would become an uninhabited desert, for it is doubtful if any other race could ever occupy their place, or perform manual labour at the great elevations which form their *habitat*.

Let us now glance at the conditions of life in some of the principal towns of this region of the Sierra. As is but natural, the farther these communities are removed from the coast, the more primitive does their mode of life become. When the only means of communication with the outside world are by difficult and sometimes dangerous mule-roads, journeys are undertaken but rarely, and new influences, objects, and appliances are not easily forth-



TYPICAL ANDINE VALLEY ; EARLY MORNING VIEW OF HUARAZ.

coming. Yet in some cases demand is met by supply, and in spite of the difficulty of conveyance of heavy goods; pianos, billiard-tables, and such things are constantly met with in the houses and restaurants of the large towns in the inter-Andine region. But books, pictures, and other essentials of refined life are scarce.

What is the aspect of these towns? Imagine yourself astride your mule upon the summit of the range which bounds one of these Andine valleys. You have toiled on all day, saddle-galled and weary, and you gladly direct your gaze to where the town lies spread below—a bird's-eye view. The streets run at right angles, with a central *plaza* containing the cathedral or church, and official buildings; the hotel—if there be one at this particular place—and various shops and houses. The cultivated plain surrounds it—the “flat place” which nature has provided, and which, together with the river which intersects it, is the reason of man's habitation there at all. For it is early impressed upon the traveller in the Andes that “flat places” are a prime requisite for humanity's existence. You begin the descent, having seen that the crupper of your mule is in place, in order that you may not journey upon the animal's neck; whilst your *arriero* tightens the pack-mule's girths. Small *chacaras*, or holdings, with little tumble-down stone huts, grass-roofed, straggle up the hillside, and bare-legged, unwashed children rush out among your animal's legs—the progeny of unkempt *Cholo* peasant women, at work within upon the preparation of some primitive meal. The little holdings are surrounded by rude stone walls, or hedges of prickly pear, or *maguey* (agave). Still you descend. The huts give place to adobe houses, with white-washed walls and red-tiled or grass-thatched roofs; the straggling trail forms itself more into the semblance of a street; your beast's hoofs rattle over the cobble pavement; some few inhabitants stand at their doors to stare and remark at the advent of a stranger; and in a moment you have entered the *plaza*.

The condition of the *plaza*, in Spanish-American

cities, is an index of the prosperity and enterprise of the particular community. In the more wealthy and advanced towns it is well paved, and planted with shrubs and flowers, and a band, during several evenings of the week, discourses music therein, to the delight of the populace. Here pretty girls and amorous youths promenade—the only means of exercise the former are permitted, and the only general meeting-ground of the two sexes. In the interior towns of Peru the *plaza* is often grass-grown and unpaved. It seems to reflect the poverty of its inhabitants, and to impress upon the foreigner that the country is but slowly recovering from the misfortunes of its troubled history. The traveller, accustomed to the movement and modernness of the cities of other lands, will observe the *triste* aspect of the place with dismay, and wish he might turn his horse's head again without delay towards the coast and civilisation. But the more leisurely observer will not fail to find much that is interesting even here. The buildings are quaint; the air of mediæval times which shrouds the grass-grown *plaza* and the half-ruined church, together with the strange garb of the Indians who slink through the streets, and the struggling evidences of modern civilisation—in shop sign or municipal notice—are almost pathetic. Whatever it is, it is peaceful; the climate is bracing, the cost of living—to foreign eyes—*nil*; and do not the surrounding hills and valleys contain unknown possibilities of mineral and industrial wealth?

The society of these places consists of the official element—the prefect and other functionaries, and few professional men; the few storekeepers, and the chief land-owners of the neighbourhood. There is but little social life—an occasional *baile*, a few political meetings, and the Sunday morning mass. At the latter, the young men of the place foregather at the church door, what time the devout *señoritas* come forth, and pass review of soft faces and flashing eyes, beneath shading mantillas. There is probably a club with billiard tables, brought with difficulty over mountain roads, as before mentioned, and newspapers of somewhat remote date. But the chief centres for gossip-

mongers are the stores, and shops where *copitas* of brandy and native spirits are sold.

The great merry-making period of the year is that of the three days' carnival celebration. During this time business is entirely suspended, and the whole population—whether in Lima and other coast cities, the towns of the Andes, or the remote hamlets of the plateaus—give themselves over to frenzied play. This consists principally in bombarding each other from the balconies of the houses with *globos*, or india-rubber bladders full of water, squirts, scents, powder, and other matters. It is impossible to pass along the streets during these three days' riotous play without being soaked or covered with flour or powder from above, and the only method is either to enter into the sport, or else lie low at home until it is over. The usual reserve between the sexes is much broken down at this time, and the warm-blooded Peruvian girl enters with much zest into the temporary licence of Carnival.

The houses of the upland towns are generally built of adobe or *tapias*—that is, of bricks or concrete made of wet earth, sun-dried and whitened—the roofs being covered with red pan-tiles, or thatched with grass. Through the wide entrance door access is gained to the *patio*, or interior paved yard, after the usual Spanish American style, upon which the various rooms look and open. The windows upon the street are all securely barred with iron *rejas*, or grilles, and the whole aspect is quaint and mediæval, though the arrangement lacks in comfort from the foreigner's point of view; whilst the interior *ménage* is naturally of a nature more primitive than that of communities in European towns. But in general, the peoples of these regions dwell in sufficiency, and that acute poverty, as among the lower strata of foreign cities, does not exist in Peru.

The ultimate and irrevocable line of caste distinction in these places is that between the coat and the *poncho*. From the prefect and the lawyer and the doctor, down to the shop assistant, the dress is the coat of ordinary European form. Be there but the smallest recognised

strain of European blood in the individual, it will be sheltered by the coat, but below this all is ignorance and the *poncho*. This useful but uncivilised garment consists of a species of blanket with an opening in the centre by which it is slipped over the head. We must, however, temper this "clothes-philosophy" by remarking that the *poncho* is used even by *caballeros* on certain occasions, especially on horseback, when, in the form of a thin white material, it wards off the sun's rays and protects the horseman from dust, whilst as a thick woollen garment it shields him from the bitter blasts and keen air of the mountain uplands. The *ponchos* woven of *vicuña* wool by the *Cholos* are of the most exquisite texture, and practically waterproof. But the ordinary blanket *poncho* is the poor Indian's greatest possession. It shelters him by day from sun or rain, and at night it forms his bed.

The advent of a foreigner in these more remote places is a matter of interest to the inhabitants, and—especially if he be a person bent upon some scientific or exploratory work—he is well and hospitably received, and all facilities afforded to him. Keen interest is taken in anything pertaining to the outside world, for these people, cut off as they are by natural barriers from its happenings, are far from being apathetic, or indifferent of events. Indeed it is this eager interest and avidity for knowledge of the modern world which most greatly touches the sympathy of the traveller, and which is the element which must redeem the people of these remote places from stagnation and decadence.

Peruvian hospitality is proverbial, and nowhere is it stronger than among the peoples of the upper class in the Sierra. The traveller soon becomes the centre of a group who press their not unwelcome attentions upon him; and they provide the best their houses afford for his refreshment and entertainment, as a rule accepting nothing in payment. This pleasing quality, in addition to being born of their native kindness, is motivated partly from the desire to be considered *civilised*, and this is not without a note of pathos. The traveller, moreover, will

not fail to recollect that he has sojourned in other—business—communities, whose higher civilisation certainly does not necessarily include hospitality. These Sierra people of Peru, whilst they possess pleasing traits of the above nature, have also others less happy. They, as a class, are sometimes unscrupulous in their business dealings, and agreements are not always to be relied upon—a defect of the Spanish-American generally, which at times overshadows his better qualities.

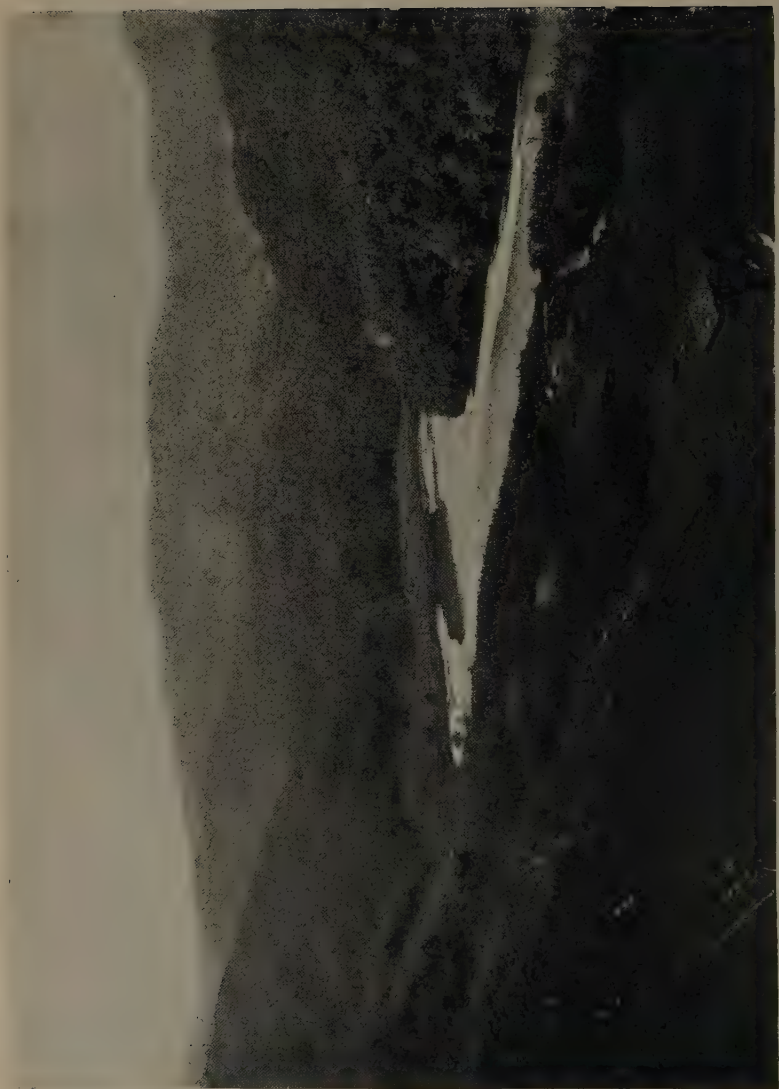
The physical character of the Sierra regions is more fully dealt with in the chapter upon Natural History, and that upon Agriculture. The region consists of (1) fertile valleys watered by rivers and streams, and enjoying a mild and excellent climate; (2) great expanses of flat uplands, principally grass-covered and treeless, whereon large herds of cattle exist; and (3) uplands at a still higher elevation, of a bleak and inhospitable nature, intersected by the rocky ranges wherein the mines are principally situated, alternating with great lake and swamp areas, all crowned by the summits of the snowy Cordilleras and their ice-capped peaks. Differences of elevation are very marked, and the traveller who left the bleak uplands in the early morning may find himself, as evening falls, in some mild valley 6,000 feet or more below, among orange groves and fig trees. The unfolding landscapes and great expanses of territory open to the view are grand and exhilarating, and in the clear upland lakes the snow-capped peaks are reflected, tinged by the setting sun. A solitary *Cholo* with a herd of *llamas* passes silently by; a chill wind sweeps over the plateau as the “westering wheel” of the orb of day approaches the horizon; and the desolation of these vast and uninhabited ranges strikes momentarily upon the traveller’s senses.

The southern part of the Peruvian Sierra is largely taken up by the great Titicaca lake and its surroundings and characteristic life. So broad is the surface of this inland sea that the voyager thereon, in places, seems to be actually out at sea rather than upon a body of fresh water, 12,500 feet above sea-level. Here the *Cholos*

maintain their primitive navigation and occupations by means of their sedge-woven *balsas*, or rafts, much as they did in pre-hispanic days.¹ On the southern shores of this lake, and upon the islands of Titicaca and Coati, are the strange and admirable ruins of the Aymará and Inca periods, which have been described elsewhere in these pages. On the bleak plateaus surrounding the lake, the *Cholos* cultivate such products as will flourish there, including barley, *quinua*, beans, and—most important—potatoes. On the northern shores they dwell in curious conical-shaped houses built of adobe bricks, such as are not seen in any other part of the country. Masses of yellow water-weed cover the swamps bordering upon the lake here, and scarlet-plumaged flamingoes rise therefrom as the traveller passes. The air at this elevation is often strongly charged with electricity, and thunderstorms are of frequent occurrence. From the lake are seen the magnificent peaks of the eastern Cordillera, in that part of its course—more than 60 miles of unbroken, snow-capped range—which extends, in Bolivian territory, between the great uplifts of Sorata and Illimani.

This region of the Sierra which we are here endeavouring to paint is an extensive one—a zone more than 1,500 miles in length and some 100 to 300 in width—several times the size of Great Britain. Typical Sierra cities are among the list given earlier in this chapter, which are principally the capitals of those departments which embrace the Andine and inter - Andine zones. Of these regions further particulars will be found in a subsequent chapter, dealing more in detail with the great Andine valleys, rivers, and plateaus, and their orography. For the moment the peoples of the third natural zone—the *Montaña*, or forest regions—and their conditions, claim our attention.

¹ See illustration on page 62.



VIEW IN THE UPPER MONTAÑA, OR FOREST ZONE: A COLONY.

CHAPTER XIII

SOCIAL SYSTEM; INHABITANTS; ENVIRONMENT

(continued)

THE MONTAÑA, OR FOREST REGIONS

The *Montaña*—*Divortia aquarum*—Sources of rivers—Inhabitants—Colonies—Inca, Spanish, and Peruvian influence—India-rubber—Indian tribes and their conditions—Customs—Weapons—Dress—Religion—Social system—Decimation—History of the Amazon—Early explorations—Conquest of the *Montaña*—Navigable rivers—Area and extent—Physical character—Climate and altitude—Temperature—Towns—Administration—Indians—Products—Loreto—Iquitos.

As the traveller descends the eastern slope of the Andes, leaving behind him the vast grass-covered areas of the plateaus and sterile, rocky ranges which traverse them, he enters a region where trees and shrubs again greet his eyes. This is the *Montaña*, the region of the forests, upon the affluents of the river Amazon.

The line of vegetation is often strongly marked. Above are the grass-grown slopes, where no trees of any description flourish; below, thickets of flowering shrubs, trees of varied kinds, and broken landscape stretching away in timber-clad ridge, valley, and plain, to where it is lost upon the eastern horizon. The traveller is looking over the upper portion of the eastern watershed of South America—the last summit he crossed was the *divortia aquarum* of the continent—and all the rills and streams he encounters are now flowing eastwardly to join the mighty Amazon.

There is much of interest attaching to the water-parting of this great continent. It is indeed the parting of the ways. Upon the one hand, the falling rain-drops or snow-

flakes descend to the Pacific ; on the other, to the Atlantic—destinies so varied and far apart. And there is a feeling almost of reverence in beholding the source and headwaters of mighty rivers—the insignificant rill born just now of rain-drops and snow-flakes beginning its journey of 3,000 miles to mingle with the sea.

Only a small portion of the area of the Peruvian *Montaña* is owned or inhabited. A few of the upper valleys have white or *Mestizo* settlers, who, buried in these leafy solitudes, live an agricultural life, raising such products as *maiz*, coffee, cocoa, etc., chiefly for their own consumption. Some colonies have been established in the past—a British at Chanchamayo, and a German at Pozuzo—but their distance from means of communication has resulted in their failure to develop, for the value of the crops is swallowed up in the cost of transport. Yet this is a magnificent zone of territory for colonisation and cultivation, whenever it shall be put into railway communication with the sea-board or the navigable waterways of the Amazon system. With a temperate climate, free from diseases of any description, the soil is among the most fertile in the world, and of such great area as might absorb many of the crowded and labourless poor of Europe.

Our present business, however, is to consider the peoples whom Nature has placed here. Nature is more profuse in this semi-tropical region as regards the vegetable world, but her human element has deteriorated. The Inca civilisation of the Andine uplands stopped at the slope of the Cordillera ; it did not control the savage tribes of the *Montaña*. Nor did the Spaniards of the Colonial period have sway over them ; nor yet have the Peruvians of the republic. The religion of the priests has not penetrated there, except in some isolated instances, and, indeed, the only civilising influence—if such it may be called—is the business of india-rubber gathering, which is now slowly opening up the heart of South America.

The inhabitants, then, of the Peruvian Amazon region are uncivilised tribes of Indians. They have been classed as far as is possible into about 112 tribes, varying estimates



INDIANS OF THE PERUVIAN AMAZON REGION : RIVER UCAYALI.

of their total number giving from less than 150,000 to more than 300,000 souls. Any exact calculation is impossible, due to the great area they occupy and to their savage and unsettled condition. These tribes are divided, territorially, about as follows:—46 tribes in the region north of the Marañon and Amazon, towards Ecuador and Colombia; 27 tribes in the middle portion of the Peruvian *Montaña*, between latitudes 5° and 11° South; 26 tribes from latitude 11° southwards towards the Bolivian territory; and 15 tribes in other portions. Each of these tribes bears a different name, some being, however, of but few members. The principal names, with some of the characteristics, of these people are:—

The Aguarunas, who inhabit the Marañon region. They build houses and cultivate the ground, are of middle stature; the women are good-looking, with regular features, customs polygamous; both sexes wear short primitive garments. They are a warlike tribe, and many years ago destroyed the town and settlement of Jaen, and killed Spaniards who sought to settle in the *Montaña*. They fight with poisoned arrows, and build the war-towers for defence. They also use the native signalling instrument, known as the *tunduy*. They have some religious beliefs, these embodying credence in a good and an evil spirit.

The Amahuachus of the Ucayali river are of somewhat similar characteristics. They are land cultivators, growing *maiz*, bananas, etc., are hostile to the white, use bows and arrows, and, in some cases, stone hatchets.

The Conibos of the Upper Ucayali have certain Inca customs relating to marriage, and, like the Shipibos and Shetibos tribes, may be an offshoot of the Inca empire. They are friendly to the whites, and show a certain spirit of rectitude in their dealings; are cultivators of the soil, and good hunters and fishers, the rivers affording abundance of fish.

The Cocamas, inhabiting the region where the Ucayali empties into the Marañon, were also influenced by the Inca empire, and are mixed with the Indians of the uplands.

The Campas tribe occupies an enormous region on the Urubamba and Ucayali rivers, and the great sacramento pampas. They form one of the most numerous peoples of the Amazonian basin, and have assimilated civilised methods to a certain degree. They cultivate extensive plantations of *maiz*, potatoes, bananas, *yucas*, etc. Their dress is a species of short shirt without sleeves—the *cushma*—woven from cotton; their weapons are bows and arrows, but they soon learn the use of the rifle, whilst they are good rowers, and friendly to the whites. Some of their sub-tribes are anthropophagus, believing that they acquire the strength and intelligence of those they eat. The Lorenzo tribe belongs to these people.

The Huachipairis inhabit the region upon the upper part of the Madre de Dios river. They also cultivate the soil, and weave cloths and ropes of wild cotton, but generally go naked, with their bodies painted red and black. They are polygamous, and are constantly stealing the women of the Quechua Indians of the Andes, and of the Campas. The men perforate the upper lip and introduce therein feathers, sticks, and shells, which add to their ferocious aspect. They are hostile to the whites, and have resisted both the Spanish and Peruvian advance. They have no fixed religion, but believe in witcheries.

The Machigangas dwell in the region upon the Urubamba and Pachitea rivers. They are cultivators and house-builders; low of stature, with regular features; not hostile; and were formerly influenced by the Incas, of whose *régime* there are evidences in the form of ruins in the neighbourhood they inhabit. They worship the sun and moon, and speak the Campa language. They are polygamous, the marriage ceremony being that by which the bridegroom enters the hut of his intended consort and hauls her forth by the hair of her head, to take her forcibly to his own habitation!

The Nahumedes are an almost extinct tribe living on the river of the same name, and it is supposed that these were the savages who attacked the explorer Orellana, who, in the time of Pizarro, descended the Amazon. These



FOREST INDIANS.

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FOREST INDIANS.

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Indians wear the short chemise, or *cushma*, and with their long hair were supposed to be women warriors or "Amazons," and this name was accordingly given to the great river. No legend or history exists among the Indians of these regions concerning any empire of women.

The Orejones inhabit the region of the river Napo and its affluents. The name is a Spanish one, meaning "large ears," and they are so called from their custom of making their ears of enormous size. They are supposed to be of Inca origin, and believe in one God, to whom they pray.

Many of these tribes have their own language, the most complete being the Campas, Antipas, Arguarunas, and Muratas. As to their arithmetic, they count by the ten fingers, but in some cases express higher numbers by movements of the fingers. The Aguarunas, in common with some other tribes, possess the curious art of making the reduced human heads, by shrinkage with the smoke of an astringent plant, and carbonising the interior with hot stones. Some of these tribes employ the method in child-birth of suspending the mother with cords to a beam, so that the body is in a vertical position during the birth. The *tunduy*, or signalling instrument, to which reference has been made, consists of the dried trunk of a tree, about 6 feet long, with a groove and holes therein, forming a kind of scale, suspended by a cord above and tied to a stake below. Blows given with a club create sound waves which are heard at considerable distances, and communications by code are thus made from one savage settlement to another.

Some of these tribes use the deadly blow-pipes, and these and their lances are poisoned with a venom which they manufacture both from bodies in a state of putrefaction, and from a certain plant. The former is used in war, the latter in the chase, as it has the quality of being fatal to the quarry without being injurious in consumption of the meat. These poisons, put up in small earthenware jars, or in cane-joints, form an article of commerce among these savages.

As to dress among them, it is generally primitive, and sometimes absent altogether. The short shirt, before described, is woven from wild cotton, and sometimes painted with figures of animals. It is used for reasons of: first, cold nearer the Cordillera; second, morality among those tribes who have any sense of this; and third, as a protection from mosquitoes. Singular marriage customs obtain among some of these people, notably the Campas, where the lovers perform in public, surrounded by the members of the tribe, those nuptial embraces which are reserved for privacy among civilised nations. They make fermented drinks, which they often take to excess. Regarding their religion, this is sometimes a mixture of superstitions and witchcraft, with a belief, in many cases, of the existence of a Supreme Spirit, probably inherited from contact with the Incas of the Andes. Some of them have some idea of a future life, and some a belief in transmigration of souls through animals. Singular ideas and theories are also held regarding the creation of the world and the beginnings of man.

As to their administrative customs, they have not formed any state of common government, and they have no particular cohesion. Sub-tribes are headed by a *curaca*, a chief chosen generally for his superior ferocity or strength. This want of cohesion among these forest Indians causes them to fall an easy prey to the *caucheros*, or white rubber-gatherers, who organise raids among them for the purpose of obtaining labourers and women, in the cruel and ruthless method common to such regions, and to the business of rubber-gathering in whatever part of the world. Bullets, alcohol, small-pox, fevers, and heavy mortality among the children as well as loss by raids, are rapidly reducing these inhabitants of the Amazonian forests, and it is probably only a question of time before they become extinct, save that a mixed race may arise, formed by the *caucheros* and the native women.

Such are, briefly, the conditions and characteristics of these forest people. They inhabit, unchecked, a vast and valuable territory which some day will count among the

land assets of the globe. Nor is it probable that this time is very remote.

Having thus briefly described the people who inhabit this region, let us now examine more closely its physical character, in view of its importance and position. First, a word as to its history.

It was but natural that the Incas, having extended their empire to the snowy cordillera which bounds the Andine plateaus upon their eastern side, should have cast eyes upon the unknown region beyond. The great table-land of Titicaca is partly bounded on the east by the cordillera which bears the Inca name of Azangaro, which means "farthest away," but the Incas penetrated beyond this, and sent expeditions into the *Montaña*, the forest region of the Amazon. The first Inca expedition of which any knowledge is held is that of the Inca Sinchi Roca, successor to Manco-Capac, and he, about the year 1136, penetrated to the Carabaya rivers, and discovered gold there. In 1300 and 1450 other Inca expeditions are recorded, the last being that of Tupac Yupanqui to the Madre de Dios river. Whilst, therefore, the *Montaña* did not form part of the Inca empire, the Incas exercised a certain influence there, and, as previously described, some of the savage tribes inhabiting it to-day show the effect of this influence. And now comes the presence of the white man. In 1500 Vicente Pinzon, a Spaniard, entered the estuary of the Amazon, on the coast of what to-day is Brazil, and first gave notice to Europe of the existence of this vast river. In 1540 Gonzalo Pizarro, brother of the *Conquistador*, began his journey to the then unknown Inca kingdom of Quito, now Ecuador, in search of *El Dorado*, and discovered the river Napo, which is one of the great affluents of the Marañon descending from the north-west. His lieutenant, Orellana, descended the Napo to its confluence with the Marañon, or Amazon, and navigated the great river down to the Atlantic Ocean—the first white man to do so. Then, during the conquest of Peru, and more especially in the Colonial period, many explorers crossed the Andes and penetrated into the *Montaña*—

explorers, priests, filibusters, royal emissaries, and others. In 1638 and 1639 Pedro Texeira repeated the journey of Orellana, but up-stream this time from Pará to Quito. This journey, it is to be recollected, embodies some 3,000 miles of travel by navigation.

The first map of the Amazon was made by the Padre Fritz, a Jesuit missionary priest who also ascended from Pará to the Huallaga, in 1701, which river had been discovered by Ursua in 1560. In 1743 La Condamine, returning from Quito on his expedition to measure a meridian arc, descended the Amazon and made a map based upon astronomical observations. At the beginning of the nineteenth century Humboldt's journeys to the Orinoco gave impulse to exploration of South America, and the British expedition of Darwin, with King and Fitzroy, was made in 1831-1836.

The Peruvian Orient was further explored in 1834 by the English officers, Smith and Lowe; by the Franciscan missionaries, Plaza and Chimini, in 1841; by Castlenau, commissioned by the French Government in 1843; and thence onward by Tucker, Werthemann, Maldonado, Raimondi, Markham, Portillo, and others. Small wonder that this great and fascinating region should have appealed to dauntless spirits to penetrate it, and even to-day the conquest of the *Montaña* is one of the most important matters which engages the attention and effort of the Peruvians, for a great part of their heritage lies therein.

In the chapter dealing with the means of communication full details have been given of the great navigable river system belonging to Peru which intersects the *Montaña*, and it has been shown that there exists an aggregate of 20,000 miles of navigable water, giving access to the whole zone.

The region included in the territory of the *Montaña* of Peru comprises nearly two-thirds of the area of the republic. It extends the whole length of the country, being bounded on the north by Ecuador and Colombia, on the south by Bolivia, on the east by the *selvas* of Brazil, and on the west by the slopes of the Peruvian

Andes, some 1,200 miles in length, and varying from 200 to 700 miles in width. It consists of (*a*) the lower slopes, foothills, and valleys of the base of the Andes, covered with timber and intersected by streams whose waters, in many cases, literally "wander o'er sands of gold"; (*b*) enormous open valleys and plains, free of timber and covered with grass, such as the Sacramento pampa; and (*c*) regions of virgin forests, in places almost impenetrable and unexplored. This latter region is traversed by the numerous rivers which are elsewhere described, and it is upon the margins of these that the india-rubber grounds are encountered.

It is to be recollected that the Peruvian *Montaña* is distinct from the forests and swamps of the lower part of the Amazonian basin, of Brazil; and this is important, in that its position and elevation above sea-level causes it to enjoy a far superior climate. It is, of course, a region of heavy and often continuous rainfall, and is at times bathed in mists. Apart from this condition, the climate of the upper portion of the zone is such as is found in parts of California, or the south of England in summer. There are two seasons—the wet, from October to April, and the dry, from May to October. The mean temperature may be taken at 72° F. to 75° F. The elevation above sea-level of this region begins at about 11,000 feet on the Andine slopes, trending downwards to about 2,000 feet upon the headwaters of the navigable river. Notwithstanding that the *Montaña* as a whole is uncultivated, and only sparsely inhabited by the Indian tribes, there are a number of towns in the upper portion. Typical of a *Montaña* community is the town of Chachapoyas, at 7,600 feet above sea-level, with a delightful climate and temperature, ranging from 40° F. to 70° F., with a mean of 62° F. Another is the town of Moyobamba, 2,700 feet elevation, with a mean annual temperature of 77° F. The inhabitants of these towns are principally *Mestizos*, with a few foreigners, and the great bulk of the inhabitants *Cholos* and Indians. The language is, as before, Spanish, and the people are equally under the laws and

administration of the Peruvian republic as the communities of the Sierra or the coast.

It is not to be supposed that the Indian tribes of the *Montaña* are such in number or ferocity as to render it uninhabitable for the white man. These *Chunchos*, as the savages are indiscriminately termed, are in reality a valuable element, being expert rowers and fishers, and practically the only labour at present forthcoming for cultivation and india-rubber gathering. With certain precautions the traveller may journey and sojourn in these regions without risk or fear.

The products of this region have been dealt with in the chapter devoted to agriculture, as also, more extensively the matter of colonisation. It is a great and interesting territory, prodigal of Nature's gifts to man, and only lying fallow until such time as man shall enter and profit by it. At present its chief product is india-rubber.

The character of the landscape in parts of the Peruvian *Montaña* is often singularly beautiful. Soft valleys, with tree-clad slopes and gently rolling land, alternating with natural pastures intersected by clear streams, extend towards the distant horizon. The soil is of remarkable fertility and yields harvests of a great variety of products, with a minimum of trouble; and, indeed, instead of roving savages and monkeys, this wonderful region might be supporting in prosperity and ease a great, civilised population.

The greater part of the *Montaña* is embodied in the huge Department of Loreto, which contains some 270,000 square miles of territory. The capital of this department, and the most important commercial and strategic centre of the eastern slope of the Andes, is the port and town of Iquitos, upon the river Marañón, below its confluence with the Ucayali. This place was established in 1863, when, under President Balta, the development of the river navigation was undertaken.

The conditions surrounding this fluvial port of Iquitos show that it is difficult to exaggerate its possibilities for future development, in view of the great mileage of interior



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navigation tributary to it, and of the fact that ocean steamers from Liverpool and Hamburg arrive there direct, notwithstanding that it is situated in the heart of the South American continent, 2,500 miles up-stream from the Atlantic Ocean.

CHAPTER XIV

SOCIAL SYSTEM ; INHABITANTS ; ENVIRONMENT

(continued)

RELIGION AND THE CHURCH

Prehistoric religion—The Incas—Sun-worship—The “Unknown God”
—Pachacamac—Inca belief in the Creator—Huiracocha—Portal of Akapana—Temple at Tiahuanaco—Titicaca—Temples of the Sun—Astronomical pillars—Earlier religious ideas—Tiger and serpent worship—Inca prayer to the Creator—Advent of Roman Catholicism—Valverde the priest—Atahualpa and the Bible—Attributes of ecclesiastical authority—Bishop las Casas—Religion under Toledo—Oppression of the Indians—The Jesuits—The priests and education—Establishing of the Inquisition—*Auto de fe*—First archbishop of Lima—Tolerant viceroys—Padillas’ report—St Toribio—Religious oppression—Viceroy Castelfuerte—Map of Padre Fritz—Independence and clericals—Abolition of the Inquisition—Last imperial archbishop of Lima—First republican archbishop—Religious toleration under the republic—Ecclesiastical administration—Cathedrals, convents, and churches—The village *curas*—General conclusions—Quechua translation—Forest Indians and religion.

HAVING examined the social life and general surroundings of the Peruvian people, it will be well to turn our attention, briefly, to the Church, and the history of religion in the country, for these are matters which have played an important part in its evolution.

The beginnings of religion in Peru—for under this must be included the beliefs of the pagan races of the country in prehistoric times—are shrouded in the same mystery which surrounds the general history of the peoples of the Andine regions. The first religious system of which any definite knowledge exists is that of the Incas. The Incas worshipped the sun for benefits received, especially for harvests, and at the time of the equinoxes and solstices,

and supplicated him for a continuance of his gifts. But there was a higher ideal behind this than the simple adoration of the material orb of day, for the Incas had formed the idea of a Supreme Being, who had created the world, and of a future life in which good should be rewarded and evil punished. The name of this "Unknown God" was Pachacamac, which has been translated as "He who gives animation to the Universe," and which embodied the idea of a creator of all things. Both this principle and the Sun-worship were attended with a complicated system of priestcraft and ritual, in which astronomical matters—as the determination of the equinoxes, etc.—largely figured, as well as sacrifices of animals, and other ceremonies. Human sacrifice did not enter into this religious system, as among the Mexicans.

The idea of the Supreme Deity was also embodied by the Andean people in Huiracocha, or Viracocha, and the representation of this spirit or being is considered to be that sculptured upon the monolithic portal of Akapana, in the remarkable ruins of Titicaca which, since the dawn of history, have been known by the name of Tiahuanaco. Temples of the Sun and astronomical pillars were found throughout Peru, in various places, but these latter were largely destroyed by the Spaniards, who considered them idolatrous. The builders of Tiahuanaco, and some others of the remarkable megalithic structures throughout the country, were, it is generally considered, of an age and civilisation preceding that of the Incas; and the underlying idea of, or belief in a Supreme Being was, it is held, probably derived from this earlier source. Some of the tribes inhabiting the Andean regions, which were conquered successively by the Incas and included in the inhabitants of the empire, had entirely gross or idolatrous systems of religion, and in some cases worshipped serpents and tigers; whilst the inhabitants of the *Montaña*, or forest regions, entertained various kinds of superstitions and fetiches such as to-day remain practically unaltered, although in some cases even there, there appear to be glimmerings of an aboriginal idea of a Supreme Being.

The Incas, then, and the great empire they controlled, were held by a chaste religion, which influenced the philosophical code of laws under which the empire was governed, and under which they lived in peace and pastoral contentment. The character of their religious thoughts is best gathered from their prayers, and the following example is typical of these:—

PRAYER TO THE CREATOR

“Oh Creator! Oh conquering Huiracocha! Ever-present Huiracocha! Thou art without equal unto the ends of the earth! Thou who givest life and strength to mankind, saying, Let this be a man, and let this be a woman. And as thou sayest, so thou givest life, and vouchsafest that men shall live in health and peace, and free from danger. Thou who dwellest in the heights of heaven, in the thunder, and in the storm-clouds, hear us! And grant us eternal life, and have us in thy keeping.”

The above is from the records of Molina, a Spanish priest of Cuzco, written for the Bishop of Cuzco, Artaun, between 1570 and 1584.¹

The religion of the Incas was entirely swept away by the implanting of the Roman Catholic system, upon the advent of the Spaniards.

The first exponent of the religion which up to to-day dominates Spanish-America was the Friar Vicente Valverde, who accompanied Pizarro in the Conquest. The epithet of “rascally” is generally applied by historians to Valverde. He it was who instigated the Spaniards to attack and massacre the Indians at Cajamarca, at the time of the capture of Atahualpa, incentive to which had been given by the action of the Inca chief in throwing to the ground the Bible Valverde had placed in his hands. Valverde was one of the principals, moreover, in the betrayal and execution of Atahualpa after safety had been promised him; which act is one of the greatest stains upon Pizarro’s character, and the history of Spanish-America. Valverde was appointed Bishop of Cuzco after

¹ The Hakluyt Series: Markham.



LIMA : CHURCH AND PLAZA OF SAN FRANCISCO.

the Conquest, and Hernando Pizarro's visit to Spain in 1535, with the portion of the royal treasure.

Through the subsequent periods of Spain's domination of Peru, the emissaries and authorities of the Church were of very varying characteristics, for toleration or for oppression. At some periods the ecclesiastical power worked in harmony with the civil—sometimes for the good, sometimes for the oppression of the colonists and the Indian population. At other times, being in opposition, they tended to balance or offset each other's good or evil measures, the civil protecting the people from the ecclesiastical, and the ecclesiastical from the civil, and so forth. But during some of the darkest portions of this chequered history the unfortunate population were worn between them both, as between the upper and nether stones of a mill.

Whilst in the mind of the student of the history of the religion of Spain in Peru a condemnatory attitude must generally arise, this must be tempered with the recognition of the work of the good and humane among the ecclesiastics of the faith. Very early in colonial history it was that the terrible abuse and destruction of the native races of Peru was denounced and brought home to the Spanish sovereign by a Churchman. In 1538 the good Bishop las Casas protested vehemently against the vassalage and ill-treatment of the Indians by the Spaniards, in the famous book which he published, and which brought about an amelioration in their condition.

In 1572, under the cruel viceroy, Toledo—the executioner of Tupac Amaru—religion was made a source of oppression, and *curas* were appointed in every village; and whilst, naturally, they were necessary for the plan of organisation of the religious machinery, as it was inevitable that this machinery should be established, they, nevertheless, oppressed the Indians with exactions for fees, and punished them with stripes for indulgence in their native customs.

The Jesuits established themselves in Peru in 1567, and in their time performed a good deal of literary work, for there were among them scholars, naturalists, and

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historians. Printing was introduced into Lima by this Order. The system of education at this period, as far as it went, was kept in the hands of the priests; and the universities, colleges, and schools at Lima, Arequipa, Trujillo, Cuzco, and elsewhere, were established by them. But education, unfortunately, was to be accompanied by the stifling of all freedom of intellect and by the brutality of repression by the Inquisition, the establishing of which institution was decreed by Philip II. in 1569. There were twelve familiars in Lima, and one in each interior town wherever Spaniards lived. This was followed by the usual operations connected with this appalling institution, and hangings, floggings, and burnings were practised upon men and women of the colonists. Confiscation of their property, torture, and the usual barbarities were suffered for the smallest differences of religious doctrine. The *Plaza de la Inquisicion* is a public square which exists to-day, in which the present House of Congress is situated, the same building which formed the Holy Office at that period. It is rather a quaint and attractive spot, and handsome shade-trees surround it, but many of the houses which look upon it must have witnessed the scenes of burnings and tortures which took place there. The first *auto de fe* was in 1573, the victim being a harmless old French Lutheran, who lived a hermit life in the Rimac valley. In the presence of the cruel viceroy, Toledo, and the Royal Audience, another sacrifice took place in 1578, a number of priests, lawyers, and merchants being done to death by lashes and burning. In the same century various others followed, and so this ghastly and inhuman work, transplanted from the Old World to this peaceful coast region of South America continued its ruinous and devastating course.

The first archbishop of Lima, Dr Toribio Mogrovejo, in 1581, was a shining example of a good and true prelate. During the period of his work until his death he travelled in the most remote parts of the country, crossing the sun-beat deserts and snowy ranges, and penetrating into the forests of the *Montaña*. He had studied the Quechua

language in order to be able to converse with the Indians, and year after year visited, baptized, converted, and instructed these people throughout the country. But having caught a fever upon one of his journeys, he died in a remote village, in 1606. He had been beatified in 1679, and was afterwards canonised, and the life of this saintly prelate is a bright episode in the history of Roman Catholicism in Peru.

Some others of the viceroys saw the evil wrought by the Inquisition, among them being the Marquis of Guadalcazar, 1622-1629, and it is remembered to his credit that he was opposed to the *autos de fe*, only one of which took place during his term. But during the time of his successor, the Count of Chinchon, three of these sacrifices took place, and more than one hundred persons, some of them of wealth and position, were martyred in these priestly holocausts. There had been only one redeeming feature in the decree establishing the Inquisition—Indians were to be exempt from its jurisdiction. But in 1657 the condition of the natives had reached a terrible pass, due to both ecclesiastical and civil oppression, and a report drawn up by the Spanish licenciado Padilla was a grave indictment of Spanish misrule, whether of bishop, priest, viceroy, or governor. The example of St Toribio had been forgotten; the bishops rarely visited their dioceses, and there was nothing to restrain the greed and exactions of local *curas*. Large fees were exacted from the Indians for sacraments or burial services, which in some cases had never been performed! The people were driven to mass, and if they failed to contribute with money, their clothing or property was confiscated.

The eighteenth century saw some advance in Lima in letters and art, in spite of the crushing load of the Inquisition. The tendency to progress—which strives to force its way upward in spite of all—showed itself to some extent. In 1724 the Marquis of Castelfuerte became viceroy, and proved to be, although a stern disciplinarian, a protector of the people from the oppression of the priests and the operations of the Inquisition. Here was

a fortunate clash between spiritual wolves and a resolute soldier. The Inquisition audaciously summoned him before them. He obeyed—with a regiment of infantry and two field-guns—and informed them that the sitting must be over in fifteen minutes, or the room bombarded! Some exploration work had been carried out by enterprising priests in the Amazon region at various times, and a map was made of that river in 1701 by the Padre Fritz.

When the eighteenth century neared its close the Inquisition had lost much of its power, although it still operated. Literature had advanced much, and newspapers had been established, whilst arts, science, and explorations of the country made much progress. The natural corollary to these matters was the first dream of Independence, which arrived with the nineteenth century. To the credit of the Church it is that the beginnings of freedom were nourished in seats of religion and learning, and that it was a priest who raised the first call to action. Mendoza, the rector of San Carlos College of Lima—the former cloisters of the Jesuits, expelled in 1767—and Chavez de la Rosa, Bishop of Arequipa, were among these liberal spirits, and most of them suffered severely. In September 1813 the news of the abolition of the Inquisition by the Spanish Parliament reached Lima, and the *Plaza de la Inquisicion*, which has been the theatre of unspeakable cruelties for two and a half centuries, was now witness to another and final scene; for the excited populace flocked thereto, sacked the Holy Office, and destroyed the archives, prisons, and instruments of torture.

The last Spanish archbishop in Lima was a good and pious old man—Dr Bartolomé de las Heras—but he was expelled by San Martin, the Liberator, in 1821. He had considered the independence of Peru inevitable, and had so written in a letter to Lord Cochrane, promising, also, to represent the position to the Holy See and Spanish Government. He died in Spain in 1823, eighty years of age, and for thirteen years the See of Lima was vacant, until in June 1834 the first archbishop of the republic was installed. Of the other Peruvian Sees, Ayacucho, Trujillo,



LIMA : INTERIOR OF THE CATHEDRAL.

Cuzco, and Arequipa, all but the last named remained vacant for a number of years, until they were filled by ecclesiastics of the republic.

It is not to be supposed that the overthrow of the dominion of Spain purged Peru of the religious fanaticism which had grown into her social system as a result of centuries of priestcraft, or that religious freedom was coeval with civil. In several of the countries of Spanish-America, as Mexico, Ecuador, and Argentina, a strong reform followed clerical domination, after independence was gained, and the Church was removed altogether from authority, whilst such institutions as monasteries and convents were rendered illegal. But this was only officially; privately, the religion retained its hold strongly upon the people, especially among the women. But Peru has ever been among the communities which have formed veritable strongholds of Catholicism; and this is natural, in view of its having been so important a centre of ecclesiastical operations! Not alone is it due to this; the character of the people lends itself to religious sentiment.

Let us glance now at the matter of ecclesiastical administration of the present day, and of the edifices which shelter it. The territory of Peru is divided into nine dioceses or bishoprics; that of Lima—which is an archbishopric—and those of Arequipa, Cuzco, Puno, Huánuco, Ayacucho, Huaraz, Trujillo, and Chachapoyas. These dioceses are subdivided into curacies controlled by curate-vicars, or *curas*, of which there are a total of six hundred and thirteen distributed all over the country. There are nine seminaries for clerical training attached to the bishoprics.

The Cathedral of Lima has already been spoken of. It was commenced by Pizarro when Lima was built; its construction lasted for ninety years. It was consecrated in 1625, partly destroyed by the earthquake of 1746, and rebuilt and finished in 1758. It is a really beautiful and spacious temple, with five naves of nine vaults each, the two sides being formed by ten chapels, in one of which repose the

remains of Pizarro. The high altar and beautifully-carved stalls attract the visitor's attention, and paintings of merit—among them a Murillo—exist there.

The temples of the principal convents of Lima are next in importance to the Cathedral, as that of San Francisco, which, with the convent of the same order, cost two million dollars, much of its former magnificence still remaining. Santo Domingo, La Merced, and San Augustin, belonging to their respective convents, are handsome structures, as is also the church of San Pedro and San Pablo, which belonged to the Jesuit convent of that name. In addition to these, there are numerous lesser churches distributed throughout the city, some of them containing valuable sculptures or relics. Especially notable is the church of Santo Domingo, built by Pizarro in 1540, and containing "a piece of the true Cross," which was sent over by Pope Paul III. as an influence of peace in the struggles between the early conquerors of Peru!

There exist, in addition, some twelve convents for nuns, with their respective churches, among them the sanctuary of Santa Rosa, Lima's patron saint. In all there are sixty-six religious establishments in Lima, and most of these were built during the seventeenth and eighteenth centuries, in different Renaissance styles, with, however, that Moorish character indicative of Spain. Many of the convents combine worthy charitable and educational work with their religious activities.

In the interior cities the churches are naturally of less important character. In Arequipa, Trujillo, Cajamarca, and other capitals of departments, there are, nevertheless, handsome stone-built cathedrals and churches. As to the places of worship of the smaller towns and villages, they are generally of primitive style and rude material, although often of quaint and picturesque appearance, the material of which they are built being adobe, or sun-dried earthen bricks, which does not lend itself to architectural detail. The roofs are covered with red tiles or thatched with grass; the walls are whitewashed, and the interiors are replete with gaudy mirrors and rickety furniture, and the usual tawdry



A CHURCH AT CAJAMARCA,

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figures of saints—life-sized dolls often they appear—such as are encountered in Roman Catholic temples throughout these countries. The poor and ignorant Indian worshippers crouch on the floor, presided over by the priest, whose dreary and mumbling utterances resound through the building.

But let us not be too critical. With its many faults of superstition and spoliation, the priestcraft of these remote places is a necessary factor in the social life. The Church was an influence originally established for good, and it still performs some of its original purpose. It could not be removed. Its restraining and organising power and influence is necessary for these primitive communities, and no sane observer would wish to see it annihilated and the inevitable relapse to materialism follow. Also the ecclesiastical influence is most useful at times to counterbalance the civil in these remote places of the interior, just as the civil is necessary to restrain the ecclesiastical. The *cura*, or village priest, and the *gobernador*, or petty civil power, are the representatives of authority in these places. They often collide, and hold each other in useful check. They both benefit; they both exploit the Indian population; but the one without the other would too freely work its will. The system has been implanted; it must remain until an evolving social state shall improve it. The chaste religion of the Incas might have brought the Indians on more quickly to civilisation than the religion of the priests, but it was annihilated. It had, in common with Roman Catholicism, the belief in a Supreme God, and the observance of righteous conduct towards the neighbour.

The priest or *cura* in the interior towns generally manages to amass a certain amount of wealth, and to live in comfort. His principal source of revenue comes from the *Cholos*, or Indian population, who pay him tithes, fees, and offerings for all services connected with the Church. The priests in remote places do not generally consider themselves bound to any law of celibacy practically, for, whatever may be their theoretical observances, they, in common with all men, require a female companion, and do not hesitate to have such.

The *cura* is generally a hospitable and entertaining host to the traveller in those regions where hotels do not exist. He loves to converse with a chance, and often rare arrival from the outside world, and a good deal of credit is due to him for the upholding of authority and order in these isolated communities.

The foregoing conditions refer naturally to the more remote places of the uplands. In the larger towns the society of the place attend the churches, and, indeed, the Sunday mass is often the main social event of the week. Here the young men—the service over—line up outside the temple to observe the sweet-faced *señoritas* as they come out, eager to be the recipient of smile or glance from demure lips and bright eyes, beneath the shade of the *mantilla*, as before observed.

As has been elsewhere remarked, the influence of Roman Catholicism in Peru is to preserve refinement and modesty among the women, and to banish the vulgar type such as is met with at times in Protestant countries. But the religion does not make for progress for the country as a whole, although the observer may well pause an instant and ask himself in this connection what progress really is, in view of the character of the commercialism of some of the world's most advanced communities.

As to the position of the Protestant Church in Peru, the practice of any other religion than Roman Catholicism is illegal. The Anglican Church and missionary schools, however, are tolerated, and the former is supported in Lima and Callao by the British colony. The district comes within the diocese of the Bishop of the Falkland Isles. In the interior, Protestant missions would encounter very strong opposition from the native priests, and indeed have already experienced such at Cuzco. A certain amount of evangelising by Protestant missions is being done among the Indians of South America, especially in Argentina, and doubtless will extend to the more remote regions of the Andes in larger measure. The language of the Indians of these regions, whether of Peru Bolivia, Ecuador, and part of Chile and the Argentine, within the Andine zone, is

principally the Quechua and Aymará, the latter being considered by some authorities the stock from which the former came. The two languages, however, appear to have been used contemporaneously, as indeed they are to-day; and one of the first books printed in Lima was a catechism for the use of the Indians in Quechua and Aymará. Quechua is a rich and expressive language, and was that spoken by the Incas, who caused it to be established as the general tongue throughout the vast territory under their dominion. There are various grammars and vocabularies of Quechua to which the student may be referred, the most complete being those compiled by Markham.

The Gospels have been translated into Quechua for the use of the Indians of the Andine region, and the following is taken from the publication of St John's Gospel in this language by a Protestant mission of Buenos Ayres, and shows the first few verses of the first chapter, and serves as an example showing the formation of Quechua:—

“APUNCHIS JESUCRISTOC

“EVANGELION

“SAN LUCASPA QQUELKASCAN

¹ “Askafia churacuncu qquelkaman huillacuspa fioccan-chis uccupi checcanchaskata; ² fioccanchisman ccoska saccay ccallariyñinmantapacha rícuspa, huillacuspa, siminchaspa. ³ Allimmi ricchauan fioccatapas allinta tapucuspa tucuy caicunata unanchañinmanta pacha qquelkayta; campac, kanchac Teofilo, ⁴ uccuncama recsenayquipac chay apu qquelka maypin ccan yachachiscca carccanqui, chayta.

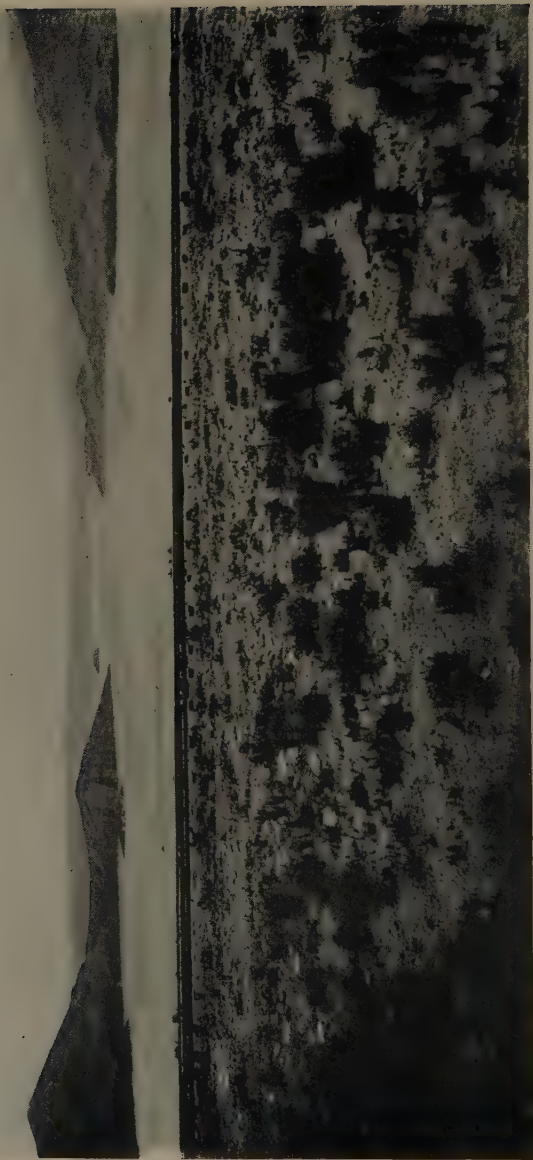
⁵ “Herodes, *Judea inca* ñiscca ppunchañinpi carccan uc amauta umu (yaya) Zacarias sutiyo, Abias ñiska aillumanta, warmintac Aaron ñiskac ususincunamanta, paypa sutintac Elizabet carccan; ⁶ Iscayñincu apu Pachacamacpa muchayñimpi mana pantaspa causarccancu. ⁷ Mana ichacca huahuancu carkanchu, Elizabet mana wicsayaccoccho carkan, ñatac machu payaña carkancu.”

As to the advisability of evangelical proselytising of the Christianised Indians or *Cholos* of Peru, it is not within the province of this book to enter. It may merely be remarked that Roman Catholicism has sunk deeply into their life; and to the philosophical observer their first and most urgent need appears to be that of betterment in their social condition.

The forest Indians, or savages of the Amazonian *Montaña*, have not, as before stated, come under the influence of religion at all, except in certain instances where self-denying priests have established themselves in those wild regions to teach them. The Jesuits, ever active in such work, long ago attempted this, and to-day in some of the settlements upon the navigable rivers a few priests—among them the Padre Muñoz—strive to sow the seeds of Christianity in these great regions of exuberant vegetation and primitive man. Both the Spanish and the Portuguese friars have participated in this work: the former descending the Andes from the west, the latter coming with the Atlantic civilisation from Brazil.

In considering the rule and religion of Spain over the Indians of America, it is open to the observer to ask whether any other nation would have been more beneficent. It is laid to the charge of the Anglo-Saxons in America that the Aborigines under their dominion have died out, whilst those of Spanish-America have remained. The two cases are, however, hardly analogous: the North Americans were roving savages largely, whilst the Aztec and the Inca peoples were settled peoples, agriculturalists and builders, and had, in a measure, established some enduring civilisation, and—at least the latter—a philosophical religious system. As to foreign rule over natives in general, there are not wanting instances of Belgian and German methods in Africa to which Spaniards might point and draw comparison. The Briton, even at the risk of being thought pharasaical, reserves his right to uphold the beneficence of British foreign rule and religious toleration.

VIEW IN THE TITICACA BASIN.



CHAPTER XV

OROGRAPHY ; GEOLOGY ; HYDROGRAPHY

The Andes—Main ranges—"Knots"—River-and lake-basins—Elevation of passes—Highest peaks—Perpetual snow-line—Lowest passes—Geology of the Andes—Structure of the Cordilleras—Formation of hydrographic basins—Ice-cap—Natural dams—*Pongos*, or rapids—Titicaca basin—The "Knots," or counterforts—Three Andine chains—Three hydrographic systems—River basins—Rivers—The Santa—The Apurimac—The Urubamba—The Mantaro—The Ucayali—The Marañón—The Huallaga—Northern affluents of the Amazon—Madre de Dios river—Madera and Beni rivers—Other affluents—Lakes—Varaderos—Snow-cap—Volcanoes—Earthquakes—Upheaval of the Andes.

AS has been shown throughout these chapters, it is to the Andes and their influence that all the marked characteristics of Peru, whether in matters of climate, vegetation, race, language, or the animal or mineral world, are attributable. It remains now to examine more closely the structure and attributes of this vast mountain range.

The total length of the Andes is more than 4,000 miles, and the system attains its greatest development in Peru and in Bolivia. From the ridge of Vilcanota in Peru—lat. $14^{\circ} 30'$ S.—to lat. $22^{\circ} 30'$ S., it expands to a width of 500 miles, enclosing great tablelands. In Peru the system consists principally of two main parallel ranges running north-north-west and south-south-east, distant from each other from 90 to 120 miles, with an intermediary chain throughout a large distance, joined by transverse knots. Immense river- and lake-basins run longitudinally between the main ranges and the lesser chains which parallel them, and these, with but two exceptions—the Huaylas valley and Lake Titicaca—have

their outlet in the system of Amazonian rivers which flow to the Atlantic Ocean. To pass from the Pacific littoral to the inter-Andine region and Amazon watershed—the Orient of Peru—the main ranges are crossed at an elevation of about 14,000 feet. The highest peaks of the Peruvian Andes, as before given, rise to more than 22,000 feet above sea-level, whilst the perpetual snow-line is found at 14,000 feet to 17,000 feet, being somewhat lower, rather than higher, as the equator is approached. North of the eighth parallel of latitude the height of the ranges diminish considerably, and at about the sixth parallel there is a marked depression, with passes at the relatively low elevation of 6,000 to 7,000 feet above sea-level. But as the equator is approached the Cordilleras again assume their colossal form, rising far beyond the limit of perpetual snow, and forming the snow-clad summits of the Andes of Ecuador.

Geology.—These huge “earth wrinkles,” which constitute the Andes, were probably upraised during the late Tertiary epoch. They are recent in the world’s history, and indeed it is strongly borne upon the mind of the traveller in these chaotic regions of mountain and flood, that nature seems hardly ready for man there. *Æons* must pass, as they have in countries geologically older, before the crests are worn down, and valleys silted in to form flat places for man’s habitation.¹ The chain is built up of Archæan and Palæozoic rocks. The Silurian, Carboniferous, Jurassic, and Cretaceous formations are encountered. Great areas of Silurian slates, and huge ramparts of limestone and quartzites, form the summits of the Andes, the edges of their tilted strata pointing heavenwards like great saw-teeth, whilst massive uplifts of granite, or peaks of limestone or diorite rise to more than 22,000 feet above sea-level. In the long limestone ridges, standing up vertically at times, great fossil ammonites confront the traveller’s gaze. Upon the high plateaus tertiary deposits of copper ores and gold alluvials rest in cretaceous rock-basins; and

¹ See paragraph at end of chapter on the upheaval of the Andes.

great coal strata, upturned at steep angles in their enclosing limestone or quartzite walls, attract the attention of the engineer. Indeed, all the minerals known to science or commerce abound in this mighty mountain range, and if—as we have said—nature has not yet prepared the Andine region for man's easy transit or occupation, she has at least preserved from erosion and consequent loss its mineral constituents.

The great depth of the Pacific Ocean off the coast of South America on the one side, and the great plains of the Amazon upon the other, show where these folds of the earth's crust which form the Andes came from. It seems to be graphically shown how pressure of contraction from east and west formed the paralleling Cordilleras, whilst some end pressure from north and south must have bulged up the "knots," or transverse sections, which join them. The Western and Eastern Cordilleras were probably formed at slightly varying epochs, the western being the more recent.

The great longitudinal basins which are formed by the folds of the Cordilleras became, after their formation, filled with water from the condensation of the moisture-laden trade-winds, from the evaporation of the Atlantic Ocean, which sweep across Brazil and Eastern Peru. This water, enclosed in the ranges which surrounded the depressions, rose until it overflowed, when a gradual excavation took place of the weakest point of the natural dams, whose levels, becoming lower and lower, gradually permitted the laying bare of the valley floor, covered with detritus and silt. This permanent level having been established, the great rivers which to-day exist continued their normal flow, constantly fed by the moisture deposited in the form of snow and rain upon the intercepting Andine summits by the trade-winds. The whole system is a natural hydraulic "machine" of great interest and beauty. An examination of these river valleys shows, in some cases, the places where the natural dams gave way, at the end of the lake period; as, for example, upon the Marañon at the Manseriche *pongo*; the Mantaro at Izcuchaca; the

Urubamba at Mainique; the Huallaga at Aguirre, etc. There remains, however, one of these great lake-basins still intact: that of Titicaca, later described. This system has never formed any outlet, and its exhaustion only takes place from the heavy evaporation of that region, due to the heat of the sun and the force of the winds. The waters of all the other great basins find their way to the Amazonian plains, and form one common stream—the Amazon. There is but one exception—the river Santa, in the Huaylas valley, and its affluent the Chuquicara, which fall into the Pacific.

The “knots,” or transverse ridges, of which mention has been made, are, beginning at the south first, the knot of Potosi, over the Bolivian border, in lat. 22° S. From this point the main chains of the Andes, the western or maritime, and the eastern, trend north-westerly to the Vilcanota, or Cuzco “knot,” enclosing between them the great plateau or basin of Titicaca, some 360 miles in length and 100 in width, the surface of the lake being 12,570 feet above sea-level. Going north-westerly now from the Vilcanota knot, the two main ranges continue more than 110 miles apart, but accompanied by a central range, forming three colossal chains or folds, enclosing between them, respectively, the rivers Apurimac and Urubamba. These three chains, running still north-westwardly for a distance of some 440 miles, approach and merge in the knot of Pasco, near lat. 11° S., enclosing there the valley of the river Mantaro, an affluent of the Apurimac. Emerging from the knot of Pasco, these three Andine folds again separate, forming the great river-basins of the Marañon and Huallaga respectively. But the western fold near lat. 10° S. becomes split into two chains, forming the valley of Huaylas. The maritime chain of these two is known as the “Black Cordillera,” from its freedom from snow, whilst the eastern is termed the “White Cordillera,” because it is covered with the perpetual ice-cap, as elsewhere described. These various cordilleras continue their north-north-westerly direction, being cut by the rivers Marañon and Huallaga respec-

tively, and increasing again in height, are once more joined together in the territory of Ecuador by the knot of Loja. Thus is seen the structure of the Andes.

Hydrography.—The Peruvian Andes, therefore, embody three hydrographic systems: first, the watershed of the Pacific Ocean, formed by the western slope, second, the watershed of the Titicaca basin, which, as above described, has no outlet; and third, the watershed of the Amazon, formed by the inter-Andine plateaus and valleys, and the eastern slopes. The rivers of the first system, those descending to the Pacific, are forty-six in number, torrential in character, and of relatively short trajectory. These have been described in the chapter dealing with agriculture on the coast zone.

The next hydrographic system, that of Titicaca, consists of the great plateau and surrounding mountains, and streams descending from them, and from the perpetual snow-cap which covers them. Various lakes form this system, chief of which is the great Lake Titicaca, 165 miles long, and more than 60 miles wide, with a greatest observed depth of 892 feet. Draining into this from the north-west by the river Ramis—the principal stream of the system—is Lake Arapa, and other lesser ones. To the south-east, upon that portion of the tableland which belongs to Bolivia, is another large lake, Poopo or Aullagas, 25 miles wide, 55 long, and a depth of only 4 to 13 feet, into which Titicaca discharges by the Desaguadero river. Upon these two lakes and the joining river steam navigation is carried on between Peruvian and Bolivian lake ports. Somewhat to the south-west are other small lakes which discharge by means of connecting streams into Lake Poopo.

The third, and by far the most important hydrographic system, is that of the watershed of the Amazon, comprising the great tablelands north of Titicaca, the inter-Andine regions, and eastern slopes of the Andes.

River-basins and Rivers.—These have already been touched upon in considering the general structure of the Andes, and full details of the navigable portions of their

waters are given in the chapter devoted to means of communication. We will now briefly dwell upon their characteristics of flow and course, considering only those which are the principal arteries, and which have an independent basin and hydrographic system.

Santa River.—The only inter-Andine river valley which drains into the Pacific is the remarkable *Callejón de Huaylas*, a longitudinal valley which, as before described, runs between the White and Black Cordilleras. The river Santa flows down the valley from its source in Lake Conococha, about 13,000 feet above sea-level, for 100 miles, when, having been joined by the Chuquicara river coming from the north, it turns abruptly to the west, and breaking through the maritime, or Black Cordillera, crosses the coast zone and empties into the Pacific near Chimbote.

Next, beginning at the south of Peru, come the great river-basins which belong to the Amazon system. These may be divided into two classes: those which rise in and traverse the Andes, and those which rise in the Amazon plain to the east of the Andes. The rivers of the first class have had their origin in the manner before described in treating of the general orography of the Andes. Their sources at the present epoch are lakes at an elevation of 14,000 feet or more above sea-level, which are fed by the thawing snow-cap of the summits. The beds of these rivers, as a rule, are at great depths below the tablelands and ridges above them, in some cases 3,000 to 6,000 feet descent being necessary to cross them. The mule-roads which descend to these rivers from the plateaus wind and zigzag down for an entire day's travel, and, having passed ascend the opposite side of the valley for similar altitudes. Naturally, the reaches of these rivers, whilst still confined to the folds of the Cordillera, are not navigable. It is when they have issued beyond the last barrier, and emerged upon the Amazonian plain, that their utility as means of travel begins. The first of these great basins is that of

The Apurimac.—This river rises in the lake of Vilafro, at an elevation of more than 13,500 feet above sea-level, in the region of the Vilcanota knot, and having been



CHARACTER OF SMALL VALLEYS TRIBUTARY TO THE ANDINE RIVER BASINS OF THE PERUVIAN
AMAZON SYSTEM: VIEW NEAR CHANCHAMAYO.

augmented by the Mantaro and other powerful affluents, it joins.

The Urubamba.—This river rises at an elevation of about 14,600 feet near the foot of the snowy mountains of the knot of Vilcanota, at lat. $14^{\circ} 30'$ S., and runs almost parallel to the Apurimac between the Central and Eastern Cordilleras. It has cut through this last chain with a huge channel 1,000 feet wide and 50 miles long, with a depth below the summits of nearly 7,000 feet. Flowing onwards, it passes again through a branch of the Cordillera by means of a remarkable cañon with high, vertical walls only 25 feet apart in places—the *pongo* of Mainique—and turning to the west near the $10^{\circ} 40'$ S. parallel, it effects a junction with the Apurimac, forming the Ucayali river.

The *Mantaro* is an important affluent of the Apurimac, flowing from the large lake of Junin or Chinchaycocha upon the plateau of Bombon, near the Pasco knot, 13,400 feet elevation above sea-level. This river also flows parallel to the Apurimac, but in the opposite direction, its course—alone among this system of Peruvian rivers—being south-east instead of north-west, over some 3° of latitude. After traversing the Jauja valley it makes a remarkable turn, and flows through the narrow *pongo* of Pahuanca and joins the Apurimac in lat. 12° S., having received a number of important affluents. Its length, from its source to its confluence with the Apurimac, is some 340 miles, in which it descends from 13,400 feet elevation at its source to 1,330 feet, or more than 12,000 feet drop in its trajectory.

The Ucayali.—This great and important river is formed by the united waters of the three foregoing rivers—Mantaro, Apurimac, and Urubamba—and their numerous affluents. Its general direction is north-north-west, similar to the trend of the other river-basins, but it no longer flows in a deep basin; for its sinuous course is now beyond the Andes, although paralleling them, traversing the great grass-covered plains and the forests of the Amazonian basin. More than fifty-five tributaries lend volume to this river, including the great Pachitea, most of which are

navigable. At $40^{\circ} 30'$ lat. S. and $73^{\circ} 27' 30''$ long. W. of Greenwich is the confluence of the Ucayali with the Marañon, and the great flood rolls onward to the Atlantic under the famous name of the Amazon. At the point of confluence, the elevation of the river is only 375 feet above the level of the sea, into which it flows more than 2,500 miles away. The conditions of navigation of the Ucayali are given in the chapter devoted to means of communication, and its importance to Peru is almost such as a sea coast would be upon its eastern side.

The Marañon.—This river-basin is the nearest to the Pacific Ocean of all the Amazonian affluents, and is separated from the Huaylas basin—which drains to the Pacific—by the great *Cordillera Blanca*, the colossal snow-capped range of the western chain. It rises near the knot of Pasco, in the same lofty and snowy region as the *Mantaro*, near lat. $10^{\circ} 20'$ S. The small mountain lagoons of Huayhuash and their draining stream the Ñupe, with the large lake Lauricocha, form the source of this river. It flows within its deep mountain gorge or basin between the folds of the Western and Central Cordilleras, the surface of its waters being in places more than 6,000 feet below the tablelands and ridges on either hand. On these high places old Inca ruins and castles¹ confront the traveller's gaze, bathed in the rolling mist-clouds which arise from this profound gorge. The Marañon follows a similar direction—north-north-west—to that of the other systems, and after running as far north as the sixth parallel, it curves towards the east, cutting through various ramifications of the Cordillera, until it arrives at the remarkable *pongo* or cañon of Manseriche, in lat. $40^{\circ} 27' 30''$ S., at 575 feet above sea-level, having descended in its trajectory some 12,900 feet from its source. Flowing with a general easterly trend now, and having received numerous powerful affluents from the south and from the north, the Marañon loses its individuality at its confluence with the Ucayali, merging its name and waters into the great Amazon.

¹ Visited by the author and described before the Royal Geographical Society.

The Huallaga.—Before the Marañon reaches its confluence with the Ucayali, it has been joined by the Huallaga, which has descended in its own river-basin between the Central and Eastern Cordilleras. This important river rises in the same region as the Marañon and Mantaro, that is, near the Pasco knot, and at an elevation of more than 14,000 feet above sea-level. It flows between the Central and Eastern Cordilleras, and its general trend is similar to the other rivers; but about half-way on its course it turns more towards the east, and cutting through the eastern chain at the narrow Aguirre *pongo*, or rapids, it falls into the Marañon at an elevation above sea-level of about 540 feet, after flowing over 6° of latitude.

As has been seen, the characteristics of these inter-Andine rivers are somewhat similar to each other. They rise in mountain lakes of great elevations above sea-level, flow vast distances along profound valleys bordered by lofty cordilleras and plateaus, and at length, breaking through the barrier to the east by the remarkable *pongos* or cañons, form one common stream upon the plains of the Amazon. The rivers of this system, it is seen, require to flow for long distances before they become navigable, whilst those of the class of the Madre de Dios begin to be navigable much nearer to their source. Before describing these rivers, however, we will glance at the system of affluents of the Marañon and Amazon which descend from the north.

The affluents of this class flow in a south-easterly direction, joining the main artery—the Marañon-Amazon—on the opposite side to the first-described system. They have their rise in the Cordillera, to the north of the Loja knot, and flow through river-basins formed by the numerous folds thrown off by the Andes to the south-east. As far as concerns Peru, these rivers, beginning at the west, are: the Morona, the Pastaza, the Tigre, the Napo, the Putumayo, and the Yapura. These rivers rise at high elevations on the equatorial Andes, in some cases north of the equator at 15,000 to 16,500 feet above sea-level, and flow for long distances from their source to

their confluence with the Marañon-Amazon. They really belong to the class of rivers which may be considered as being navigable nearer to their source than the inter-Andine affluents of the Amazon which are first described, and which come from the south-east. They flow through territory in some cases claimed by Ecuador as well as Peru, and whose ownership is under arbitration; and through part of Brazil in the case of the Putumayo and Yapura rivers. Their respective navigable lengths are given in the chapter upon means of communication.

Coming now to the system of rivers still affluents of the Amazon, which have their rise in the Amazon plain at the foot of and beyond the topographical influence of the Andes, are the following:—

Beginning at the south is the great Madre de Dios river, which, with the Beni and other large affluents coming from Bolivia, form the enormous Madera river, an arm of the Amazon which forms the boundary between Peru and Brazil. This river is the centre of a large fluvial system, and hydrographically it is the real source of the Madera. It rises in the snows of Querus, near lat. $13^{\circ} 20' S.$, and at an elevation of 12,800 feet above sea-level. The first part of its course is known as the Querus, to where it unites with the Pilcopata, its direction being from south to north. Turning to the north-east it joins the Manu, flowing from the north, and afterwards its general trend is towards the north-east, with a winding and tranquil course through the Amazon plain to its confluence with the Beni. In the first part of its course the fall is very rapid, as far as the rapids of Coñec, the declivity being nearly 11,700 feet in 45 miles, whilst the remaining 650 miles fall only 680 feet. The main tributaries of this river have somewhat similar characteristics. They are principally the Marachea, Pilcopata, Tono, Piñipiñi, Manu, Chilive, Pucapuca, Inambari, and tributaries, Marcapata, Sangaban, Tambopata, Heath, and Beni.

Other rivers of this character are the Aquiri, Purus, Yurua, and Yavari, all of which cross the Amazon plain in the same direction—north-east—as the Madre de Dios,



CHARACTER OF AFFLUENTS IN THE AMAZON PLAIN.

draining a huge area and giving access thereto by navigation, and having passed the Peruvian frontier, they fall into the Amazon in Brazilian territory. The conditions of navigation of all these rivers are given in the chapter upon means of communication.

Lakes.—The principal lakes have already been mentioned, as Titicaca, Junin, Vilafro, Parinacochas, Conococha, Lauricocha, and others, most of which are the sources of rivers. There are numerous lakes of a few miles in length or circuit almost upon the summit of the Andes, or rather on the very high plateaus, at elevations of 15,000 to 18,000 feet above sea-level. Among these may be named Aricoma, in the department of Sandia, Choclococha and Orcococha, in the department of Huancavelica, the Huaillacho lake, the most remote source of the Amazon by its affluent the Apurimac, near Caylloma, 15,500 feet above sea-level, and many others throughout the great Andine zone. In addition, there are the lakes upon the Amazon plains, some of them permanent, as the Laguna, the Gran Cocama, in the Sacramento Pampa, and the Caballococha, of the Amazon. There are others which are only temporary, the result of periodical inundations.

Varaderos. — The isthmuses, or interfluvial spaces between the headwaters of the rivers on the Amazon plain are somewhat remarkable. The sources of the affluents of these rivers are often separated by only a few miles from each other, and communication by canoe navigation is maintained at times by making a portage across these *varaderos*, as they are termed, thus completing the link in a vast circuit of waterways. The construction of canals or light railways has been projected across some of these spaces. An important example of such an isthmus is that of Fitzcarrald, between the Manu, an affluent of the Madre de Dios, and the Serjali, an affluent of the Urubamba and Ucayali, which rivers enclose an enormous range of territory. A *varadero* is, of course, the limit of the *divortia aquarum* of a system, and such conditions can only occur in regions of heavy rainfall and flat plains.

Snow-cap.—The lower line of perpetual snow in the

Peruvian Andes ranges from about 17,000 feet elevation above sea-level in the south to about 14,000 feet in the north, it being apparently the lowest as the equator is approached. It seems probable that the snow-cap is retiring, as evidenced by the appearance of glaciers and moraines. It is a notable fact that perpetual snow does not exist upon the maritime Cordillera, but only upon the eastern ranges. This is exemplified especially in the Black and White Cordilleras, in the department of Ancachs. As elsewhere stated, many of the ice-clad peaks and passes of the Peruvian Andes have never been ascended or crossed by human foot.

Volcanoes.—The part of the western chain of the Andes which bounds the plateau of Titicaca, between the knots of Potosi and Vilcanota, is also known as the volcanic chain, between 15° and 21° S. lat. These contain the principal volcanoes of Peru, some active, some extinct. Among these are several craters in the province of Moquegua, as Tutupacu, of which the last eruption occurred in 1802; Huaynaputina and Hachalayhua, whose eruption in 1606 buried several towns under a lava flow; Coropuna—one of the highest peaks in the whole chain of the Andes; Omate, Ubinas, and Candarave, the last three being active. Near Arequipa is the famous Misti, whilst the sole volcano in the Eastern Cordillera is Apucanachuay, in the department of Cuzco.

To the structure of the Andes is largely due the frequent earth-unrest upon the South American coast—Ecuador, Peru, and Chile—the severe earthquake shocks which during the past history of these countries have often devastated the cities, and which always menace them. Seismic disturbance here is not only due to volcanic action, but to the movement of the vast strata of which the Andes are partly built up.

Upheaval of the Andes.—As before stated, the Andes have been upheaved in recent geological times, perhaps by successive stages. It may even be that aboriginal man beheld some of the changes in those regions, and in this connection the conditions encountered on the great



CHARACTER OF STERILE UPLANDS IN THE PERUVIAN ANDES.

uplands give rise to certain interesting reflections regarding the epoch of their elevation to their present high altitude. How did the large population which formerly existed there subsist in a region so lofty where few food products grow—a large population such as must have been required to furnish workers to move the great monoliths and construct the colossal buildings encountered there, as in the Titicaca basin? The suggestion has been made, even, that the Andes have reached their final elevation since the time of man's habitation of them, and since the epoch of the great megalithic structures. Whilst it is doubtful if this explanation could be accepted, it is, nevertheless, remarkable that these works and evidences of former population exist at an elevation above sea-level where corn does not grow.

Disintegration.—The forces of disintegration are ever at work upon this great mountain range—visibly so; and the traveller, as he pursues his way over the dividing summits and high plateaus, and ascends or descends the interminable slopes, has them ever before his senses: the frosts, snows, rains, winds, earthquakes, and sun, all of which are the operating causes at work upon the material of future horizons. Here Nature is working in her high laboratory, busy upon a phase of her stupendous operations: a cycle of her endless and inexplicable purpose.

CHAPTER XVI

NATURAL HISTORY; CLIMATE; AND PATHOLOGY

Vegetation of the *coast* zone—Treeless regions—Climatic causes—Character of coast plains—Mineral deposits on coast—Coast streams—Vegetable products—Vegetation of the foothills—Tree life—Temperature—*Flora* of the Sierra region—Trees—The eucalyptus—*Magüey*—*Nopal*—*Maiz*—Vegetation of the high plateaus—Yareta—Andine-Arctic region—*Fauna* of the coast zone—Guano-producing birds—Fishes and marine life—Inca fish-carriers—Tarantulas—Scorpions—*Camarones*—*Fauna* of the uplands—Deer, *llamas*, and alpacas—Rodents—Bird life—The Condor—Inter-Andine *flora* and *fauna*—Eastern slopes—Line of tree life—Timber—Useful plants—India-rubber—*Fauna* of the *Montaña*—Animals, birds, reptiles—Climate and temperatures of the three zones—Epidemics—Mortality—Peculiar diseases—Effect of climate on races—Variations of temperature—Goitre—Mountain-sickness—Fevers—Syphilis—Remedies—Mist-phenomena.

In the chapter dealing with agriculture it has been shown that Peru is a country possessing a wide range of vegetable products, due to the great differences of elevation of the soil and consequent varying zones of climate and temperature. In this chapter we shall briefly consider the vegetation of these successive zones, without pretending to cover the entire *flora*, and observe the *fauna*.

The coast zone, the plains and deserts between the Pacific Ocean and the Andes, and the western slopes and tablelands of these mountains themselves, present one noticeable feature to the observer—they are treeless. There are, of course, stunted trees in the ravines of the foothills, and others of more generous growth surrounding towns and irrigated areas, but these latter are not wild,



VILLAGE ON THE COAST ZONE.

having been sown or planted. Some of them are not even indigenous, and among those most plentifully found are the eucalyptus, or Australian blue gum.

Indeed, upon the *sabanas* of the coast there is, as a rule no vegetation whatever, a condition due to the absence of rainfall in the region between the Andes and the sea. In many desert regions of other countries there is, generally, straggling vegetation of some nature, even if it be only those numerous and appalling examples of Nature's work—armed with thorns at every point—such as the Cactus tribe produce, and such as are found in Mexico and Arizona, or other North American arid regions. In the Peruvian coast deserts, however, or at any rate in the central and southern portions, there is neither leaf, thorn, nor flower—nothing but the dreary sunburnt areas containing only the species of the inorganic or mineral world. The sand-hills of Tacna and Arica; the sandy plains of Arequipa—strewn with the curious *médanos*, or crescent-shaped, moving sand-dunes, and the dry borax-bearing basins; the *salinas*, or salt plains of the coast north of Mollendo; and the areas covered with drifting volcanic ash from the eruptions, centuries ago, of volcanoes. In the northern part of Chili, the frightful salt plains of Tarapacá, are absolutely bare of vegetation, looking like an arrested sea of salt-and mud- waves, as also the nitrate deserts of that province, and of Atacáma. Indeed, Nature has been niggardly in her vegetable world along this coast, but she has compensated in a measure by endowing it with mineral wealth. Among this we may recapitulate and enumerate, as matters of commercial profit, the salt-beds, the sulphur deposits, the borax-beds, the mica-bearing strata, the nitrate fields, the deposits of soluble salts of copper, as sulphates and silicates, and numerous other matters awaiting investigation.

This coast region is crossed by the torrential streams which descend from the Andes, and it is only in their vicinity that any vegetation flourishes, whether natural, or induced by artificial irrigation. The plants which principally flourish and are cultivated here are described

under agricultural products. They include the sugar-cane, cotton, grape-vines, olives, rice, camotes, yucas, beans, peas, lentils, tobacco, tamarind, etc., etc.

Of tropical fruits grown upon the coast there are bananas, pomegranates, paltas (*anacardium occidentale*), melons, chirimoyas (*anona chirimolia*), grapes, oranges, pea-nuts, and others. Of natural or uncultivated vegetation there is little. A scanty pasture is encountered in places — a grass — known as *maicillo* and *gramalote*. Almost the only trees upon the zone are the *algarrobo*, an exceedingly hard-wooded species, which abounds in the more northern part of the country. The *nopal*, or prickly pear, a cactus, is also a product of coast valleys.

As we ascend the *lomas*, or foothills, we find some natural pasture of grass during certain seasons, and in the ravines now appears scantily a little timber, the *quishuar* (*buddleia incana*) tree, sought after for fire-wood and for construction. Its trunk is twisted, and of small diameter. We soon pass from the warm coast zone and enter the temperate zone, beginning at about 6,000 feet elevation. The coast zone, however, is not remarkably hot; not nearly so much so as in other countries of the same latitude. For example, the average temperature of Lima (lat. $12^{\circ} 3' S.$) is $66^{\circ} F.$, whilst that of Bahia in Brazil on the Atlantic Coast (lat. $12^{\circ} 58' S.$) is $77^{\circ} F.$

In the temperate zone up to about 11,500 feet we have as cultivated products those described in the chapter on agriculture, especially the cereals, *maiz*, barley, wheat, and potatoes, alfalfa, *quinua* (*Chenopodium Quinoa*) — a grain largely consumed by both the white people and Indians. None of the tropical products of the lower zone grow here, but a *flora* very similar to that of Great Britain is encountered in places, including such specimens as ferns, nettles, buttercups, violets, and stitchwort. Here also are blue lupinus, wild geraniums and pelargoniums. Of fruits there are apples, pears, cherries, and strawberries, under desultory cultivation. Of trees there are in greater profusion the *quishuar*, as also the mountain ash, and a



IRRIGATED CROPS ON THE RIVER CHILI, NEAR AREQUIPA,

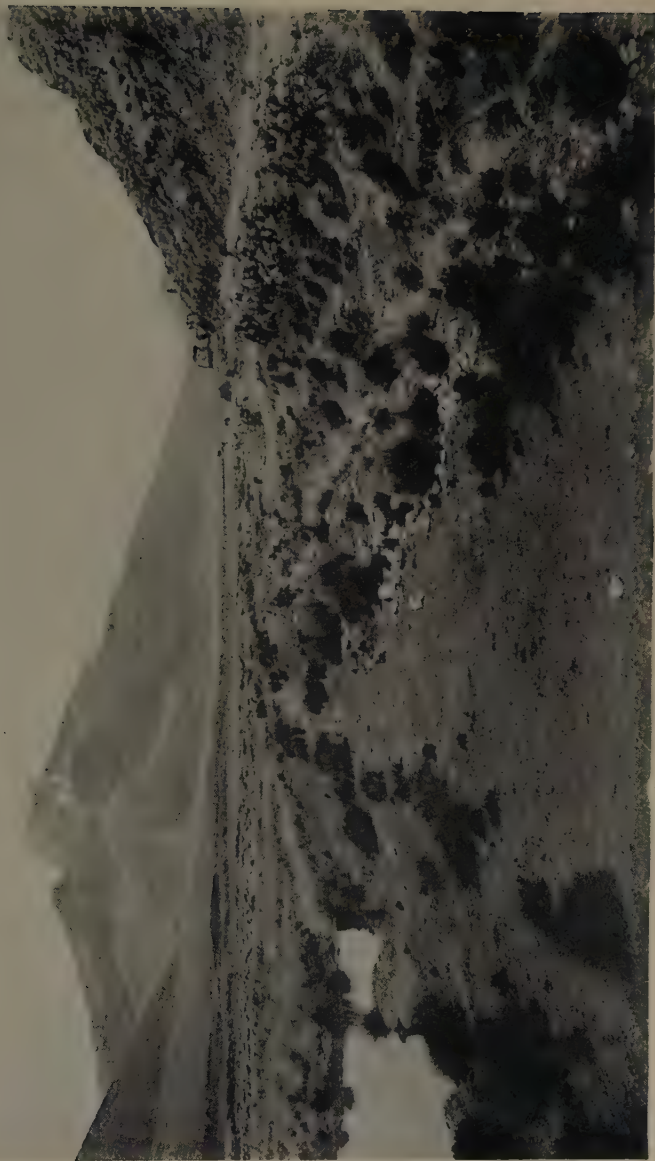
stunted *roble*, or oak, whilst hawthorn is seen, and great masses of yellow-flowered acacia. The eucalyptus rears its tall, blue column and elegant foliage far above the scant vegetation, for this useful tree, many years ago, was introduced into the Peruvian Andes, and plentifully distributed. Its timber is invaluable for making bridges, and other purposes. Among the Cactus tribe here is the *maguey* (*agave Americana*), commonly known by the Indians as *penca mexicana*, a name which must have been introduced by Spaniards from Mexico, in which country it is a most valued factor of industry. In Peru it grows plentifully in the inter-Andine valleys, and is used for its fibre, in the manufacture of ropes, sacks, etc. The Peruvian Indians, however, are not acquainted with the use of its sap for making *pulque*, as in Mexico. The *nopal*, also, or prickly pear, with its agreeable fruit known as *tunas*, is prolific in the warmer portions of this zone, and is planted to form hedges of protection to the small holdings of the Indians. The *nopal* is the habitat of the cocheneal. Another of the Cactus tribe is the *airampo*, a tinctorial plant producing a carmine-coloured grain. Here are also willows, and along the streams in the fertile valleys, flowering *daturas*, and the beautiful *quenuar* trees (*polylepis villosa*), whilst one of the mimosas, a curious sensitive plant, is encountered. This is familiarly known as *tápate*, meaning "close up," for when lightly struck with the hand, the leaves slowly close up, as if offended.

Maiz is one of the principal cereals of cultivation here, and in addition to its ordinary use, the natives make a refreshing light fermented drink—a kind of beer—of the grain, known as *chicha*. They do not grind the grain into meal and make *tortillas*, like the Mexicans, to take the place of bread, but use the latter article made of wheat-flour, and also use toasted *maiz*, known as *cancha*, as a substitute. Mention must not be forgotten of an important article of native diet, the *aji*—the large pepper pods, which are termed *chile* in Mexico. The natives consume these in large quantities, either green or dried. When

dry they take on a vermilion colour, and the traveller often descries from a distance a brilliant red patch on the hillside—a stock of *aji* drying in the sun. This region is the home of the potato, one of the Indian's main articles of diet. A bitter wild potato flourishes in some places, and it is supposed that the prehistoric races of the Andes evolved the modern useful tubers in the lapse of time from this. Some medicinal plants are encountered here, as the *ratania*, a shrub whose roots are employed in dysentery. Growing upon the face of rock escarpments and upon the old ruins of this upland region is seen the Peruvian ivy (*Ephedra andina*).

As we pass the elevation of 11,500 feet, plant life begins to disappear. There remain but few forms: the *quinua*, whose sombre foliage fringes the edges of the ravines, and an elder, the *sauco* (*sambucus peruvianus*). The tablelands and slopes, both here and in the upper part of the lower zone, are, however, covered with *ichu* (*stipa Incana*), or coarse, high grass. This is one of the Indian's most valuable resources. It covers his roofs, gives him fodder and even fuel, and has a variety of uses. And the tall sedges (*Scirpus*), of which they build their *balsas*, or rafts, cover the shallows of the lakes here.

As we continue upward the scanty vegetation takes on a more and more humble character. At 13,500 feet the hardy barley no longer grows; the *sauco* and *quinua* have disappeared. A few low, thorny shrubs, especially the *chuquirahua*, struggle against the low temperature, and this and the *ichu* are almost the only vegetable forms. Here, however, is the remarkable *yareta* (*Azorella Umbelliferae*), which deserves some special mention. This strange fungus-appearing growth is encountered on the Andine plateaus at about 13,000 feet elevation, partly in Peru, principally in Bolivia and the north of Chile. In form it is like a huge mushroom, but without a stem, and growing adhered to the bare rocks. It is from 1 to 3 feet in diameter, and is composed of a woody substance impregnated with resin. On examination it is seen to consist of innumerable small, star-shaped, woody flowers



HIGH PLATEAUS OF THE PERUVIAN ANDES.

at the surface, closely compressed together. The plant is valuable as fuel, and is gathered by the Indians for this purpose and sold at a good price. But it is of slow growth, and in some places the plateaus are becoming denuded of it. Near at hand, also, grows the great cactus *giganton*, which is, however, rarely found, and is possibly becoming extinct.

And now we reach the lower limit of the snows. Here the *huamanripa* (*criptochacte andicola*), a medicinal plant used in bronchitis, opens its petals in the snow. Some downy plants of curious form, covered with a cotton-like substance, with leaves shrinking close to the stem as if striving to resist the cold, are encountered, as the *culeitium canexens*, *rufecens*, and *nivale*. And lastly, our upward journey has brought us to an Andine-Arctic region, the country of the lichens, no vegetation remaining but the simple *cryptograms*. Above, all is bare; the organic world has made its final effort, and the splendour of the morning and evening sun falls only upon those culminating points of matter—the high peaks of the Andine Cordillera, covered with a mantle of perpetual snow.

If the *flora* of the slopes and tablelands of the Andes and the coast plains is, as we have seen, scarce, the *fauna* is, as a natural corollary, not very plentiful in its species. The coast zone is singularly free from animal life of any kind, except those domestic species—horses, mules, goats, dogs, etc.—introduced by man. There is one notable exception—the vast flights of birds which find resting-place upon the islands that fringe the coast, or the sandy precipices upon the sea verge. Myriads of sea birds are encountered here, sometimes flying low near the surface of the water like a veritable cloud. These birds are the makers of the famous *guano* deposits which have figured so much in the recent history of Peru. Strange that the deposits of birds' droppings should have been partly the cause of a war between three nations—Bolivia, Chile, and Peru! The birds which form these coveted stores of fertiliser are the *palmipeds*, the web-footed species, as the *alcatraz*, sea-gulls, marine crows, etc.

The finny denizens of the sea, as well as the winged, afford some considerable harvest, and fishing along the coast is an industry of the natives. The local names of the principal fish are, the *lenguados*, *congrrios*, *corbinas*, *lisa*, *tollo*, and *pejerrey*. The most esteemed of these is the *pejerrey*, and it is related that in the time of the Incas—as an illustration of the rapidity of their system of means of communications—fish was eaten by the Inca every day in Cuzco—the famous old capital, more than 100 miles inland beyond the Cordillera of the Andes—brought in *fresh* by Indian runners. Whales are captured in the equatorial waters of the Pacific, and brought to Tumbez for the extraction of the oil. Other denizens of the coast are the sea-lions or seals, which are encountered on the rocky promontories. The usual class of molluscs are found in certain situations.

Of small animals and reptiles in the deserts and foothills there are few: small lizards, and the scorpions, or *alacran*—a venomous reptile which stings from a lance in its tail, at times fatally. This animal sometimes stings itself purposely, and dies, when captured. The tarantula is another venomous vermin of the hot valleys; but snakes are almost unknown on the Pacific slope. In the rivers which cross this zone fresh-water fish abound, and of crustacea, the *camaron* is abundant—a large fresh-water prawn which is considered a great delicacy, and much esteemed in Lima.

As we rise to the slopes of the Andes we encounter the only native quadrupeds of this region—a small *venado*, or deer, in the valleys and ravines, and then in the Sierra, the *llamas*, *vicuñas*, *guanucos*, *alpacas*, and other wool-bearing animals of indigenous origin. These have been fully described in the chapter dealing with natural products. Besides these, there are, of course, the introduced domestic sheep and cattle. Another prolific inhabitant of the rocks and crags of the Sierra is the *viscacha*, or native squirrel, which is seen in thousands by the traveller as he rides through these rocky fastnesses. These animals are good eating. Of other rodents, besides the squirrel and rabbits, and the usual rats and mice, there is the native



SEA-LIONS ON THE COAST OF PERU.

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cui, or guinea-pig, also an article of diet in the Sierra. Here, also, is the home of the chinchilla.

Fresh-water fish are caught in Lake Titicaca, but the lakes at higher elevation have no fish life at all in their waters. As to bird life, in the lakes and swamps of Titicaca scarlet-feathered flamingoes sport themselves; and upon the high tablelands the *alcamarine*, a white gull-like bird, flies up with its peculiar cry as the horseman passes. On the lesser lakes of these high regions numerous wild fowl, web-footed and otherwise, are observed, and fat *perdices*, or partridges, scurry away across the path into the grass of the hill-slopes. But chief of the feathered kind in Peru is the famous condor of the Andes. This great bird of prey, of the vulture family, descends at times to the verge of the Pacific Ocean, but his real home is in these uninhabited uplands. He is Nature's last word here in the living world—fit monarch of these rocky fastnesses and pinnacles of the Cordilleras.

As has been shown, this great region of the Pacific littoral and the Andes contains no dangerous or ferocious reptiles or beasts. There are no tigers, lions, bears, wolves, coyotes, or serpents, such as are found in other countries. Indeed, as far as wild beasts are concerned, the traveller may wander unarmed and fearless where he will.

Let us now consider the more tropical regions. The inter-Andine region consists of the great river valleys, between the main ranges of the mountain system. As we descend from the summits and tablelands to the lower elevation of these rivers—such as the Marañon, Huallaga, Mantaro, Apurimac, etc.—we again enter a temperate zone where sub-tropical vegetation flourishes. Cereals and alfalfa are again encountered; oranges, limes, and even coffee, in the warmer valleys. So rapid and marked are the changes in the temperature and vegetation due to the great differences of elevation, that the traveller, who in the early morning left the upper regions of the snows and bare *paramos*, or plateaus, may, when evening falls, find himself passing through orange groves or plantations of sugar-cane, along the margins of the rivers. Here he will encounter

situations of delightful climate and picturesque surroundings, such as seem to invite him to sojourn there and forget the Andine snows and turmoil of life beyond them. But his way lies onward. The last range of the Cordillera must be surmounted, and the descent begun to the Amazonian plains, where very different conditions of *flora* and *fauna* will be found.

The limit of arborescent vegetation begins at an elevation of some 11,000 feet above sea-level, upon the eastern slope of the Andes, and the line of demarcation is often strongly shown. Above that altitude, extending upwards to the summits we have just described, the conditions are very similar to those of the western slope, the ground being generally covered with the *ichu*, with the scanty tree life in the ravines.

As we descend from this natural line the vegetation becomes rich and varied. Numerous trees and flowering shrubs are found at every turn. The trail is overgrown in places with brushwood, and at times this is matted overhead so thickly as almost to exclude the light of the sun. The temperature has risen; the mists in the morning lie heavily along the valleys, and in the rainy season a veritable deluge descends upon these great forest seas, which stretch away interminably towards the east. The slopes of the valleys and ravines are covered with timber—trees, wherever the eye rests, except upon the stony or sandy stream-bed. The rocks are no longer visible; they are covered deep with the soil formed of decayed vegetation; and cleared spaces are rapidly overgrown by the exuberant plant life, if left unattended.

To enumerate the varieties of vegetable life found in the forests of the Amazon would require a volume alone. Indeed, in great part the species are unknown and unclassified, but it has been calculated that a square league of the *Montaña* contains as many as three million different trees. The vegetable products, as far as they refer to commercial use, may be classed as follows:—

Timber for constructional purposes, including cedar,



VEGETATION IN THE PERUVIAN MONTAÑA.

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ironwood, walnut, *caoba* (mahogany), and a variety of others.

Medicinal plants, including quinine, cocaine, sarsaparilla, vanilla, etc., and many awaiting scientific investigation.

Aromatic plants; *fibrous* plants for textile purposes; *tinctorial* plants; *resinous* and *rubber-bearing* trees and plants; vegetable ivory, etc., etc. The conditions of the india-rubber industry have been described elsewhere. Of food products in the vegetable world this wonderfully exuberant region produces almost everything, and the list of fruits exhausts those known to horticulture. These have been enumerated in the lists of agricultural products in another chapter.

Fauna.—Nature, richer in the vegetable world in this upper *Montaña* zone, also provides a more plentiful variety of animal life, although still in the transition stage, as regards variety, between the Sierra and the tropical forests. The principal animal inhabitants of this belt are the *puma*, the *armadillo*, and the *hormiguero*. But as we descend into the dense tropical forests of the lower, or true *Montaña*, a great profusion of birds, beasts, and fishes is encountered. Here is the *jaguar*, the *tapir* and numerous bands of *peccaries*. The great *boa-constrictor* has its home in these forests, and *monkeys* people the branches of the trees in places, whilst *parrots* and gaily-coloured birds are encountered at every turn. *Butterflies* are found in almost all the zones of Peru, some of very large size. And lastly, as we navigate these silent rivers which traverse the great forests, *alligators* and *turtles* are seen in profusion upon their muddy banks, whilst their waters teem with fish life. In the zoology of the Amazon region nearly fifteen thousand species have been collected recently, eight thousand of which were new.

Climate and Pathology.—The conditions of climate and temperature have been set forth in the chapters dealing with the conditions of the three great zones, and in that upon agriculture. It may be said that a choice of climate may be made in Peru—from tropical to Arctic—by ascending from the coast plains to the plateaus, or *vice versa*.

In the coast zone there are two well-defined seasons—summer and winter, from December to May and June to November respectively. In summer the maximum temperature (Lima) is 78° F., and the minimum in winter 59° F., whilst the mean ranges from 63° in the south part of the zone to 77° F. in the north, as before given. No other country in the world in similar latitudes (3° to 19° S.) offers so cool a temperature, and this and the absence of rain have been explained elsewhere in describing the effect of Andean snows and the coast current. The effect of these conditions is to form a healthy region. The yellow fever which appeared in Peruvian ports in 1854 and 1868 became extinguished after short periods of epidemic, and the bubonic plague, which broke out in 1903, has also disappeared, and at no time was remarkably serious. The most prevalent disease in the coast zone is malaria, or swamp fever, which is found in the irrigated valleys at times, due to lack of proper drainage, and the consequent formation of swamps and mosquito-breeding conditions. But the remedy for these matters is known, and is being applied, following closely upon the scientific investigations which have been made in other parts of the world. In the fields and villages the malaria is the main element of mortality, whilst in the cities of this zone tuberculosis forms the chief figure of the death-rate, amounting in Lima to 33 per cent. of the total. Infant mortality is high all over the country in the cities, and shows a proportion of 25 per cent. of the death-rate, being much higher in certain regions. Typhoid, dysentery, and small-pox, have greatly diminished during the last few years, due to improved hygienic methods, small-pox being rare in the cities. Scarlatina, diphtheria, and measles do not appear as severe epidemics, and hardly any deaths from these sources are recorded. An epidemic of grippe, or influenza, occurred in 1892, but few cases have been observed since then.

In some of the upper parts of the zone there exists the disease known as *verruca*, or Carrion's disease, and this is peculiar to Peru. It occurs only in a few narrow



TROPICAL VEGETATION ON THE AFFLUENTS OF THE PERUVIAN AMAZON.

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valleys or defiles, at an elevation of 3,000 to 6,000 feet above sea-level, and consists of an eruption on the skin or mucous membrane, principally on the face or limbs, with red-coloured tumours of varying sizes. Anæmia and fever precede the disease, and if the eruption does not take place it often proves fatal. It is advisable to avoid washing in, or drinking the water of these particular places, as the disease appears to be connected therewith, although its real nature is unknown. On the whole, the climate of the coast zone, whilst it is healthy and often conducive to longevity, is, nevertheless, enervating, due to lack of brusque, thermal change; and the peaceful and indolent nature of the coast inhabitants is due to this, as well as the deterioration which overtakes animals—such as hunting-dogs and race-horses—imported there. Indeed a somewhat similar effect takes place, in some cases, among foreigners who live there long.

In the Sierra, or highland zone, there are also two defined seasons: summer, which is the drier and colder, and winter, the season of storms and heavy rainfalls, from October to April. The mean temperatures of parts of this region during the day range from 50° to 57° F., with a maximum of 60° and a minimum just below freezing-point. But there are very great extremes in the higher places, and a wide range between day and night, or sun and shade. Thus in some of the highest mining regions, 16,000 feet elevation, 104° F. is registered at midday in the sun, and 37° F. in the shade, simultaneously; whilst at night the thermometer went below freezing-point. Nevertheless, even at such altitudes, there is not excessive freezing. On the whole the climate of the uplands may be described as healthy and invigorating, whilst in certain places the temperature and conditions are such as form veritable sanatoria, famous for their effect in curing chest affections. In some of the valleys of the inter-Andine region the climate has been described with truth as that of a "perpetual spring."

The diseases which form the chief causes of mortality in the upland regions are small-pox and typhus, and ever

since the Conquest these have been factors in the depopulation of the Andes. They are solely due to lack of hygiene, and the poor conditions of nourishment and shelter often obtaining among the highland Indians. Pneumonia and enteric fever are also frequent, owing to similar causes. Other curious diseases are, the *uta*, a chronic ulceration of the face, easily curable. This has been often mistaken for the European disease of *lupus*, to which it appears similar. Also the *coto* or *bocio*, the great swellings of the neck, similar to the European disease, *goitre*. Snow-blindness, known as *surumpe* by the natives, is sometimes suffered on crossing the snow-fields of the Cordillera, and the *soroche*, or mountain-sickness, attacks those unused to high elevations at times. This unpleasant affection appears to be due to the diminished atmospheric pressure upon the brain and lungs, and is accompanied often by severe headache and vomiting. Custom, and proper treatment, however, overcome this. As to the Indian population of the uplands, most of their ills are due to the abuse of alcohol—the great increase of drunkenness among them, which threatens to wipe out the population of these regions.

The upper part of the eastern forest zone, the *Montaña*, enjoys excellent climatic and health conditions, and this zone must be regarded as distinct from the lower and flatter part of the Amazonian watershed. It enjoys a mild and equable climate, subject to heavy rainfall. The seasons are similar to those of the highlands—the wet from October to April, and the dry from May to September, as described in the chapter treating of its agricultural conditions. The mean temperature is about 72° F. to 75° F.

The climate of the Amazonian plains, although hot, is lower than that of other tropical countries, due to constant winds and copious rains. As to the pathology of the part of the region belonging to Peru, plague, cholera, and yellow fever are unknown, the only diseases of importance being the malaria and anæmia, which prevail at certain times and in certain places. This is often fatal among the natives, but when treated scientifically is

curable. It may generally be avoided by care, and the observance of a proper *régime*, and use of quinine.

It is a notable fact that the Peruvian Indians rarely suffer from venereal diseases common among the whites and blacks. This has been attributed to the habit of mastication of the *coca* leaves (cocaine), which, the Indian states, is a remedy against syphilis and kindred diseases.

It is quite erroneous to suppose that these regions are unsuited to Europeans, for, except in certain instances, they offer splendid conditions for colonisation, as shown elsewhere.

The conditions of climate and temperature in the varying zones of Peru give rise at times to remarkable phenomena connected therewith. In the valleys of the Andes the most curious mist effects are sometimes observed. The traveller, descending from some high plateau or pass, bathed in sunlight, comes down to what looks like the surface of a sea—mist billows which fill the valley and roll against the rocky sides in such a way as forms a veritable illusion of tempestuous ocean, into which the trail suddenly plunges. Below this sea is the town and valley. And sometimes the strange and beautiful phenomenon of the anthelion is observed—a halo of rainbow light projected by the rays of the sun upon the shadow of the observer's head on the surface of the mist.¹

As evening falls in the Andes, vast mist billows arise from the valleys and sweep over the landscape like menacing ocean rollers, and hang in wreaths upon rock escarpments like gossamer veils. On the hot deserts of the coast the phenomenon of the mirage—known in Spanish as *espejismo*—presents itself at times to the horseman as he pursues his way over those sun-burnt wastes.

¹ See the author's book: "The Andes and the Amazon."

CHAPTER XVII

MEANS OF COMMUNICATION

Geographical situation—The Panama Canal—Access to the Atlantic—Steamship lines—Ocean steamers—Coasting steamers—Seaports—Railways—Table of railways—Gauge and length—Ownership—New railways—Trans-Andean lines—The Oroya railway—Roads—Mule-trails—*Arrieros*—The Inca roads—Fodder—Interior navigation—Lake Titicaca—The Amazon rivers—Their extent—Table of rivers and lengths—Draught of steamers—Cable and telegraph lines and telephones—Post office.

THE geographical situation of Peru, upon the west coast of South America in the northern part of the continent, has rendered it somewhat remote from Europe or the New York side of the United States, or, indeed, from the great commercial ocean of the world—the Atlantic. Peru is one of those countries which will be benefited by the Panama Canal, whenever this great work shall be carried to completion.

Peru has, however, a direct means of communication with the Atlantic Ocean through the great river Amazon, as has been fully described in these pages. But this is a route which has been little used hitherto as regards Peruvian territory.

There are three ways of reaching Peruvian territory from Europe and North America. First, from Liverpool, Southampton, or New York, to Colon, crossing the isthmus by the Panama railway, and taking steamer from Panama down the Pacific Coast of South America. The best service on this route is the Royal Mail Steam Packet Company of London, whose comfortable steamers perform fortnightly journeys from Southampton to Colon, touching at Spanish and West Indian ports upon what forms an interesting and enjoyable voyage. There are also several New York lines running to Colon, but inferior in point of comfort and general service to the European lines, although of frequent sailings from New York.



COASTING STEAMER ON PACIFIC COAST: PACIFIC STEAM
NAVIGATION COMPANY.



OCEAN STEAMER: PACIFIC STEAM NAVIGATION COMPANY.

The French, Spanish, German and Italian transatlantic companies also give efficient service from Europe to Colon.

Secondly, the lines which leave European ports direct for the Pacific *viâ* the Straits of Magellan. The principal of these is the old-established Pacific Steam Navigation Company of Liverpool; the pioneer steamship company in the Pacific, with a fleet of forty-one steamers. The fine vessels of this line tranship their passengers at Valparaíso to the coasting steamers of the same company. These perform the journey of 3,000 miles from Valparaíso to Panama, *viâ* Callao, calling at Chilian, Peruvian, and Ecuatorian ports. At Panama connection is made with the Royal Mail at Colon, or the other lines. The Lamport and Holt Steamship Company of Liverpool have a service *viâ* the Straits, and there are also American lines upon that route. The fine cargo steamers—carrying passengers—of the German Kosmos line, carry on an extensive trade with the Chilian and Peruvian coasts, with Hamburg, Bremen, and Antwerp. The Roland line, also German, sails to this coast.

There are two lines of coasting steamers between Valparaíso, Callao, and Panama, those of the Pacific Steam Navigation Company, before mentioned, and those of the "Sud-Americana," a Chilian line. The steamers of both these lines are of similar type, British built and officered. They are comfortable, safe, and efficient, the generally calm ocean on which they ply permitting the type of construction in which all the cabins are on deck—a far more attractive arrangement than that necessary on deep sea-going steamers, where the rooms are below. The voyage up and down the Pacific Coast on the Pacific Steam Navigation Company's steamers is comfortable and interesting. The time occupied from Southampton to Callao by the Colon route is about thirty days; that *viâ* Magellan about six weeks.

The third means of entering Peru is through its Amazon ports from the Atlantic Ocean. The river port of Iquitos, some 2,500 miles up the Amazon from the coast at Pará, in Brazil, is served by three lines of ocean steamships—the Booth line, fortnightly from Liverpool; the Red Star line, now belonging to the Booth Company;

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and the Amazon Steam Navigation Company. The navigable rivers of Peru are described later.

Ports.—The seaports on the Pacific Coast, beginning at the north and enumerating towards the south, are: Tumbes, Talara, Payta (P), Eten (P), Pacasmayo (P), Huanchaco, Salaverry, Chimbote, Samanco, Casma, Huarney, Supe, Huacho, Chancay, Ancon, Callao (P), Cerro Azul, Tambo de Mora, Pisco, Lomas, Chala, Quilca, Mollendo (P), Il, Arica (P).

Of these, those marked (P) are principal ports at which the Panama steamers call, and which are the main points of import and export. The others are lesser ports, but are served by the coasting steamers also. Payta, Chimbote, and Callao are very fine sheltered bays and harbours. Most of the others, on the contrary, are open roadsteads where landing is sometimes difficult, owing to heavy surf. Callao is the third port in point of importance on the whole Pacific Coast, coming next to San Francisco and Valparaiso.

Railways.—As stated elsewhere, it is hardly to be expected that a country like Peru—whose coast line is paralleled by one of the highest mountain ranges in the world, which cuts it off from the interior—would possess a large mileage of railways, or indeed of roads. The crossing of a range of mountains at altitudes of 15,000 feet above sea-level by lines leaving tide-water is a stupendous undertaking. There are, nevertheless, two such railways existing in Peru, and others are projected. Also the broken and hilly nature of the interior renders the cost of railway construction high; far more so than, for instance, in such countries as Argentina. Most of the short lines are those which leave coast ports, and, running inland over the relatively flat coast zone, die a natural death on encountering the slopes of the Andes. These, with the two trans-Andine railways, may be called the transverse lines. Of longitudinal lines, from north to south, there are as yet none, save short sections from the transverse lines, along some of the easier longitudinal valleys.

The following table gives the existing railways which are in actual working, with particulars relating to their construction and ownership:—



THE HIGHEST RAILWAY IN THE WORLD : VIEW ON THE OROYA LINE.

TABLE OF PERUVIAN RAILWAYS

Name of Line.	Con- structed in.	Gauge in Metres.	Length in Kilometres.
*Payta to Piura	1884	1.45	97.00
*Piura to Catacaos	1888	0.75	10.65
Bayovar to Reventazon	1904	1.00	45.00
Pimentel to Lambayeque	1873	0.91	24.14
Eten to Ferreñafe	1871	1.45	43.10
Eten to Cayalti	1904	0.60	37.00
Chiclayo to Patapo	1871	1.45	24.00
*Pacasmayo to Yonan	1876	1.45	96.00
*Salaverry to Trujillo	1875	0.91	76.00
Chicama to Pampas	1898	0.91	30.00
Trujillo to Laredo	1896	0.91	12.00
Laredo to Galindo	1896	0.91	13.00
Galindo to Menocucho	1905	0.91	5.00
Huanchaco to Roma	1902	0.91	40.00
*Chimbote to Suchiman	1872	1.00	52.50
Supe to Pativilca	1902	0.60	12.20
Pativilca to Paramonga	1903	0.60	10.00
Supe to San Nicolas	1899	1.00	6.00
Chancay to Palpa	1877	1.00	30.00
Playa Chica to Salinas de Huacho	1876	1.00	10.00
Callao to Lima	1849	1.45	13.70
Lima to Chorillos	1858	1.45	13.90
Callao to La Punta	1872	1.45	2.60
Callao to Bellavista	...	1.45	3.40
Lima to Magdalena	1902	1.45	5.00
*Lima to Ancon	1869	1.45	37.00
*Callao to Chicla	1870	1.45	141.30
*Chicla to Oroya	1893	1.45	80.70
*Oroya to Cerro de Pasco	1904	1.45	131.00
*Ticlio to Morococha	1900	1.45	13.40
*Oroya to Huari	1906	1.45	21.00
Casapalca to Carmen	1900	0.60	4.65
Vista Alegre to Goillarisquisga .	1905	1.45	100.00
Cerro Azul to Cañete	...	0.91	11.00
Tambo de Mora to Chíncha Alta	1898	1.00	10.00
Pisco to Ica	1869	1.45	74.00
*Mollendo to Arequipa	1869	1.45	172.00
*Arequipa to Puno	1871	1.45	351.76
*Juliaca to Santa Rosa	1872	1.45	132.00
*Santa Rosa to Sicuani	1891	1.45	68.00
*Sicuani to Checcacupe	1906	1.45	41.00
Ensenada to Pampa Blanca	1905	0.75	8.00
Ilo to Moquegua	1871	1.45	100.00
Lima to Callao (electric)	1904	1.45	14.00
Lima to Chorillos („)	1904	1.45	14.00
Lima to La Herradura („)	1906	1.45	17.00
		Total	2,196.80 K.

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This is equivalent to 1,362 miles.

Those lines linked together in the table form systems; the Callao-Oroya line being the famous Oroya railway and branches, whilst the Mollendo to Arequipa and Puno is the Southern Railway of Peru, which connects the coast with Lake Titicaca and Bolivia. The lines marked * belong to the Peruvian Government, but are controlled and worked by the Peruvian Corporation, and these, it is seen, cover the greater part of the total mileage. The other lines are principally owned by small companies, or belong to the owners of sugar estates or to mineral properties. The electric railways from Lima are well constructed and well-paying concerns.

A good deal of railway building is projected in Peru, and several short lines are under construction, as follows:—

Huari to Huancayo, 101 kilometres. This is the continuation of the branch from the Oroya railway into the fertile valley of Huancayo.

Checcacupe to Cuzco, 97 kilometres. This is the completion of the Southern Railway of Peru (from Mollendo, through Arequipa, to the old Inca capital of Cuzco and its fertile surrounding valleys). It is almost completed.

Tablones to Recuay, 130 kilometres. This is the extension of the existing line from the port of Chimbote up the valley of Huaylas, which efforts are being made to construct.

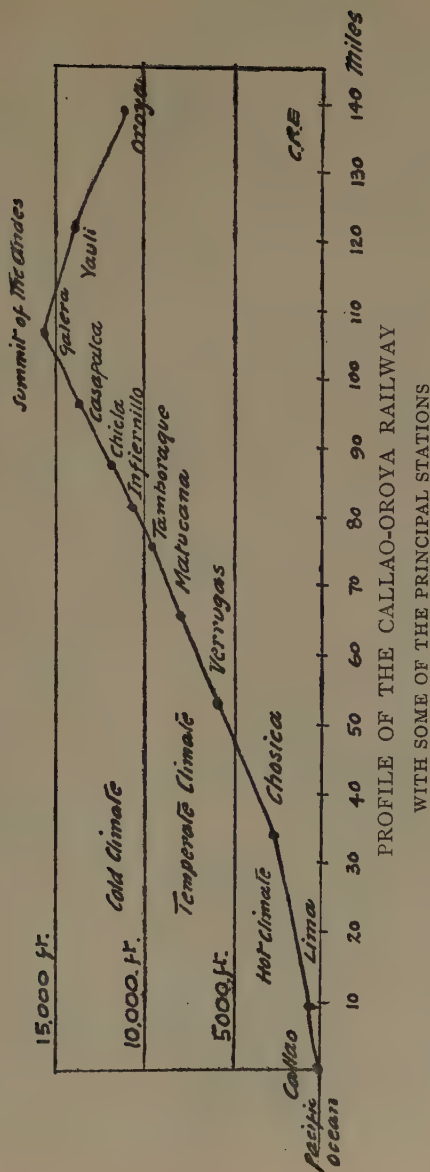
A line is also under survey from Lima to Huacho, along the coast, about 140 kilometres in length; and this should be a valuable feeder for Lima. A line is also projected southwards along the coast, from Lima to Pisco.

In addition to these, a series of important lines are projected to place the Pacific Coast in direct connection with the navigable affluents of the Amazon. The northernmost of these, and probably the most important, is that from Port Payta to the river port of Limon, crossing the Andes, with a total length of 660 kilometres. The advantageous feature of this line is, that it will cross the Andes at the low elevation of about 6,600 feet, and will



TRANS-ANDINE RAILWAYS: BRIDGE ON THE OROYA LINE.

PERUVIAN TRANSANDINE RAILWAYS



PROFILE OF THE CALLAO-OROYA RAILWAY

WITH SOME OF THE PRINCIPAL STATIONS

terminate on the main stream of the Amazon—or Marañon, as it is known at that point. It will be, in effect, a trans-continental route.

The next of these projected transverse lines is that from a point on the Oroya-Cerro de Pasco railway, known as Cacaracra, to a river port—Iparia—on the Ucayali, a distance of 310 miles. This river is navigable for small steamers into the Amazon at Iquitos. The third project is from Checcacupe, on the Southern or Arequipa railway, on to the great Madre de Dios river; which river, traversing Peruvian territory, empties into the Madera, and thence into the Amazon, in Brazil. This line will be about 240 miles long. The building of these three lines—and there is no doubt that they will be constructed some day—will form transcontinental routes, *vid* the Amazon, between the Atlantic and Pacific. Especially important for Peru is the most northern project, that from Payta to the Marañon.

The long-projected Pan-American railway would traverse the Peruvian highlands, and it is possible that portions of the short longitudinal lines of Peru, existing or projected, might form links in this system. The line would enter Peru from Ecuador, across the river Canchis, and thence would traverse the following places on its way southwards: Jaen, Cajamarca, Huaraz, Cerro de Pasco, Oroya, Huancayo, Ayacucho, Cuzco, Juliaca, Puno, leaving Peruvian territory to enter that of Bolivia, near Desaguadero. This railway would confer immense benefit on the Andine uplands, at present so inaccessible to traffic.

The railway from Callao to Lima, about $8\frac{1}{2}$ miles long, was built in 1848, and was probably the first steam line to be constructed in South America.

The construction of the famous Oroya railway was begun in 1870, during the presidency of Balto, and the work was done by the famous American contractor, Meiggs. The line is a remarkable one in many respects, and is justly held up as an example of audacious railway construction. Starting at Callao, at tide-water, it crosses the coast zone, and ascends the valley and cañon of the Rimac. Leaving the stream-bed it performs a remarkable series of curves



BRIDGE ON THE OROYA RAILWAY.

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and "loops" to gain altitude, and at length, having been pushed up the mountain slopes by a number of zigzag sections, where the train alternately travels in opposite directions, it reaches the summit of the Andes at 15,645 feet above its starting-point at sea-level. Here it pierces under the crest of the Cordillera by means of a tunnel, and thence begins to descend the eastern watershed to Oroya, situated at 12,178 feet elevation. This line was enormously costly in construction, and its upkeep is expensive. Difficult tunnelling—there are sixty-three tunnels on the line—and heavy bridge work were performed, and the whole stands as a remarkable example of what an expenditure of capital can produce in such matters.

Less remarkable, but nevertheless a notable piece of work, is the line from Mollendo to Arequipa and Lake Titicaca, which, with rapid curves and steep gradients, also surmounts the Andes at 14,660 feet above sea-level. This line was completed in 1847, and steamers were placed on Lake Titicaca. Continued traffic is kept up on this lake between Peruvian and Bolivian ports, and down the Desaguadero river.

Roads.—We now come to the matter of roads. Similar difficulties, naturally, have warred against the construction of these, viz.: topographical considerations; nevertheless, much more might have been done by a more energetic and progressive people. The interior cities of the Andes, in most cases, have no communication with the outside world, or with each other, except the mule-trails which bare necessity has established. The whole of the goods traffic and passenger travel is performed on mule- or horse-back over these trails. Not a wheeled horse-vehicle is to be seen in the republic, except in Lima and Callao, or in Arequipa and Trujillo, and even there they are unable except in the case of Lima, to move outside the streets of the cities. Indeed, it is a characteristic of all American civilisation—north or south—that railways have been constructed before roads were built, and this is a condition which some day will have to be remedied. Well-kept

roads are a greater proof of advanced civilisation than numerous railroads.

The means of travel away from the railways are, therefore, slow and laborious. The traveller meets strings of pack-mules, each carrying his *quota* of about 300 lbs. weight of merchandise, ores, provisions, or other goods, winding around the faces of precipices, crossing desert plains—where they form the only object in the interminable horizon—or fording rapid streams on stony beds, with the water washing their flanks and bellies. The rate of travel may be taken at about a league an hour. The *arriero* starts at dawn, and likes to off-saddle before evening falls. It is a hard and difficult calling he pursues, but he sings a cheery song as he winds through the cañon at the tail of his train, and whistles cheerily to his beasts as the morning sun tints the snow-capped Cordillera, which he must have passed before sunset if he would journey without accident.

The present roads are sometimes inferior to those which, it will be recollected, existed during the time of the Incas. The two great trails which those people constructed and maintained—one upon the coast zone, the other on the highlands or plateaus—are conceded to have been veritable works of art, although there has been much exaggeration about them by writers who have not seen them. They extended from Cuzco to Quito, some 500 leagues, and the buildings and ruins they served are of extreme interest to the traveller to-day.¹

There is no reason why the Peruvians should not make good waggon roads connecting their cities. There exists both material and cheap Indian labour at hand. The present Government are beginning to do this to a certain extent, and are constantly voting sums of money, and sending out different corps of engineers for the purpose. The reasons for past negligence have been—revolutions, lack of energy, want of funds and misappropriations of

¹ See "The Andes and the Amazon"; also the chapter on Inca history, before.



TUNNELS ON THE OROYA RAILWAY.

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available funds by petty authorities, and difficult climatic and topographical conditions.

The most important among "means of communication" in Peru at present is fodder! This is the traveller's first question at daybreak and his last utterance as the sun sets. Alfalfa is grown everywhere up to certain elevations, as before described, but above that, dependence must be placed upon barley, straw, grain, and natural pasturage; often very unsatisfactory substitutes.

A route of travel which must be mentioned is that from the Oroya railway station to the headwaters of navigation of the Pachitea river, at Port Bermudez. This road was constructed by the Government to complete a transcontinental route of travel from the Pacific to the Atlantic Oceans, *viâ* the Amazon, pending the prolongation of the railway. It was laid out at considerable cost, and a sum of money is yearly devoted to its maintenance. It is known as the "central route," and passes through the town of Tarma, and other smaller places, with a length of about 210 miles, accomplished in nine days on mule-back, to Port Bermudez. At this point steam launches take the passenger down the Pachitea river into the great Ucayali, and onward into the Amazon at the river port of Iquitos. Here the Booth line ocean steamers leave for Liverpool, *viâ* Pará. The distances from Lima to Iquitos are as follows:—

Place.	Conveyance.	Distance.	Time.
Lima to Oroya	Railway .	128 miles	1 day
Oroya to Port Bermudez	Mule-road	210 "	9 "
Bermudez to Iquitos .	Steamer .	930 "	7 "
		1,268 miles	17 days

Another road which may be mentioned is that built by an American mining company from Tirapata, on the Southern Railway, to the summit of the Andes above Cruceros, and thence into the *Montaña*.

Navigation.—The next, and in some respects the most

important means of travel in Peru is by navigation. That upon the coast has already been described—the excellent steamers which bring mail, merchandise, and passengers thither, and transport them thence. There are three systems of navigation in Peru—the Ocean, the Lake Titicaca, and the Amazonian rivers.

That remarkable body of water, Lake Titicaca, 12,370 feet above sea-level, 165 miles long, and 60 to 70 broad, which exists between the two main ranges of the Andes, and which has no outlet in a hydrographical sense, affords the means of communication between Peru and the chief Bolivian cities by the line of steamers which ply thereon. These steamers run in connection with the railway which ascends from the coast *via* Arequipa, as before described.

And thirdly, the navigable waterways of the Amazon and its affluents, the most remarkable river system in the world. The rivers which descend into, and form the main stream of, the Amazon in its upper portion, in the territory belonging principally to Peru, and partly to neighbouring republics, may be divided into three sets—those which flow from the south-east, paralleling the direction of the Andes; those which come from the north-west; and those which, flowing north-eastwardly, join the Amazon outside Peruvian territory, notwithstanding that they rise therein.

In the first category, the principal of these great affluents are the Marañon, the Huallaga, the Apurimac, and the Ucayali and its tributaries. These are they which principally feel the effects of the topography of the Andes, and are entirely in Peruvian territory. In the second are the Morona, the Pastaza, the Tigre, the Napo, the Putumayo, and the Yapura. The headwaters of some of these great streams is in the territory whose possession is disputed by Ecuador, but they enter the Amazon in Peruvian ground. In the third series are the great rivers Madre de Dios and Madera, the Purus, the Yurua, and the Yavari. These all traverse Peruvian territory, but the three first fall into the Amazon in the territory belonging to Brazil.

The main stream of the Marañon, or Amazon, which

from the point known as the *pongo* or rapids of Manseriche runs about due east, is not as variable in the depth of water in its channel as might have been supposed. This favourable circumstance is due to the fact that the affluents which feed it from the north-west are at their lowest period—February and March—at the time when those from the south-east are at their high period—the low-water period of these being in August and September. This compensating condition preserves a certain equilibrium in the main Amazonian channel.

The total aggregate navigable length of these Peruvian rivers for craft of any description, from ocean steamers down to rafts and canoes, is 20,000 miles in the rainy season. For steamers of 20-feet to 2-feet draught, 10,000 miles are given, falling to 5,800 miles in the dry season. These rivers and tributary streams, therefore, form a vast network of natural canals, traversing the *Montaña* of Peru in all directions.

The following is a list of these navigable rivers as far as steam navigation is concerned, which has been specially compiled. The navigable length is given, and the draught of steamers which may ply thereon. These rivers are in Peruvian Territory, except that in some cases they traverse or enter lands in dispute with neighbouring republics. The figures must be taken as approximate, for exact conditions are unattainable. It is to be recollected that this region has still to be thoroughly explored and mapped, and that many of the lesser tributaries of the rivers traversing it are unknown to geographers at present.

TABLE OF PERUVIAN NAVIGABLE RIVERS OF THE AMAZONIAN SYSTEM

HIGH-WATER PERIOD

For steamers of 20-feet draught

River.				Navigable length.
Amazon (Peruvian)	.	.	.	Total <u>422 miles</u>

For steamers of 4-feet to 8-feet draught

River.	Navigable length.
Marañon, to Port Limon	484 miles
Yapura (Peruvian), to Cachuela Cupati . .	124 "
Putumayo (Peruvian), from Cotuhe to Igaraparana	285 "
Yavari, to Galvez	546 "
Napo, to Aguarico	558 "
Tigre, to the confluence of the Cunambo-Pintuyacu	415 "
Huallaga, to Yurimaguas	143 "
Lower Ucayali	868 "
Pachitea	217 "
Yurua (Peruvian), from Ipixuma to Amoña .	273 "
Purus (Peruvian), from Labrea to Catay .	955 "
Acre, to Irari	223 "
Curaray, to Cononaco	285 "
Aguarico	68 "
Total	<u>5,444 miles</u>

For steamers of 2-feet to 4-feet draught

River.	Navigable length.
Marañon, from Port Limon to the Pongo of Manseriche	74 miles
Putumayo (Peruvian), above Igaraparana .	391 "
Igaraparana	205 "
Mazan	25 "
Tamboryacu	12 "
Cunambo	37 "
Pintuyacu	37 "
Corrientes	99 "
Pucacuro	37 "
Pastaza, to Huasaga	124 "
Morona, to Manhuasisa	310 "
Manhuasisa	74 "
Cangayma	56 "
Potro	12 "
Apaga	12 "
Cahuapanas	19 "
Yavari, from Galvez to Paisandu	242 "
Galvez, affluent of the Yavari	31 "
Huallaga, from Yurimaguas to Achinamisa .	87 "
Carry forward	<u>1,884 miles</u>

For steamers of 2-feet to 4-feet draught (continued)

				Navigable length.
Brought forward	.	.	.	1,884 miles
River.				
Aipena, to Naranja Tambo	.	.	.	56 "
Tapiche	.	.	.	155 "
Blanco, affluent of Tapiche	.	.	.	68 "
Tamaya, from Putaya	.	.	.	99 "
Abujao	.	.	.	6 "
Aguaítia	.	.	.	62 "
Pichis, to Port Bermudez	.	.	.	93 "
Palcazu, to the Pozuzo	.	.	.	87 "
Upper Ucayali	.	.	.	310 "
Urubamba, to the Mishagua	.	.	.	105 "
Tambo	.	.	.	105 "
Perene, to the Pangoa	.	.	.	6 "
Caspajali	.	.	.	14 "
Manu	.	.	.	93 "
Madre de Dios, to the Manu	.	.	.	601 "
Aquiri	.	.	.	300 "
Acre, above Irari	.	.	.	124 "
Total	.	.	.	<u>4,155 miles</u>

LOW-WATER PERIOD

For steamers of 20-feet draught

River.	Navigable length.
Amazon (Peruvian)	Total <u>422 miles</u>

For steamers of 4-feet to 8-feet draught

River.	Navigable length.
Marañon, to Port Limon	484 miles
Yavari, to the Yavari-Mirim	316 "
Lower Ucayali, to Contamana	620 "
Purus (Peruvian), from Labrea to Cachoreia	174 "
Yurua (Peruvian), to the Moa	93 "
Total	<u>1,687 miles</u>

220 MEANS OF COMMUNICATION

For steamers of 2-feet to 4-feet draught

River.	Navigable length.
Marañon, from Port Limon to the Pongo of Manseriche	74 miles
Huallaga, to Achinamisa	229 "
Lower Ucayali, from Contamana to Pachitea	248 "
Upper Ucayali, from Pachitea to Cumaria	186 "
Pachitea	217 "
Putumayo (Peruvian), to Igaraparana	285 "
Tapiche	155 "
Potro	12 "
Cahuapanas	12 "
Yavari, from Yavari-Mirim to Galvez	229 "
Napo, to Aguarico	496 "
Curaray, to Cononaco	285 "
Morona, to Rarayacu	211 "
Pastaza	31 "
Tigre, to the confluence of the Cunambo Pintuyacu	415 "
Total	<u>3,085 miles</u>

These vast systems of rivers which penetrate right up to the foot of the Andes, and afford steam navigation to a distance of only 250 miles from the Pacific Ocean (as the crow flies), afford means of communication for a great part of Peruvian territory with the Atlantic Ocean and Europe. The river port of Iquitos, as before stated, is served by direct lines of steamers from Europe, and is destined to become a most important centre.

Telegraphs.—The remaining means of communication in Peru are the submarine cables, the land telegraphs, and the wireless telegraphy installation. There are two cable lines, a British—the West Coast Cable Company of the Eastern Telegraph Company—and an American—the Central and South American Company. A network of telegraph lines, principally operated by the State, give communication to all the principal cities and towns of the interior. There are more than 3,100 miles of these lines with one hundred and thirteen offices. Wireless telegraphy installations have been erected at Port Bermudez, the river

port on the Pachitea, or Pichis, to communicate with Massisea, some considerable distance down on the Ucayali, and it is intended to complete the means of radiographic communication to Iquitos. This section in Peru is the first example of a successful installation and working of wireless telegraphy in a region of tropical forests, as experiments which have been previously made in the Congo and in Brazil were not successful.

Telephones.—Lima and the surrounding towns are all connected by telephone lines, and most of the principal cities of the interior possess lines, the total network reaching about 5,225 miles. The largest stretch is that from Pacasmayo to Cajamarca, about 120 miles.

Post Office.—The post office system of the republic has been much improved of late years, and its operation covers all expenses, and leaves a good surplus. Its service, however, leaves a good deal to be desired in the interior. There are five hundred and sixty post offices throughout the country. Peru belongs to the Universal Postal Union.

CHAPTER XVIII

AGRICULTURE AND NATURAL PRODUCTS

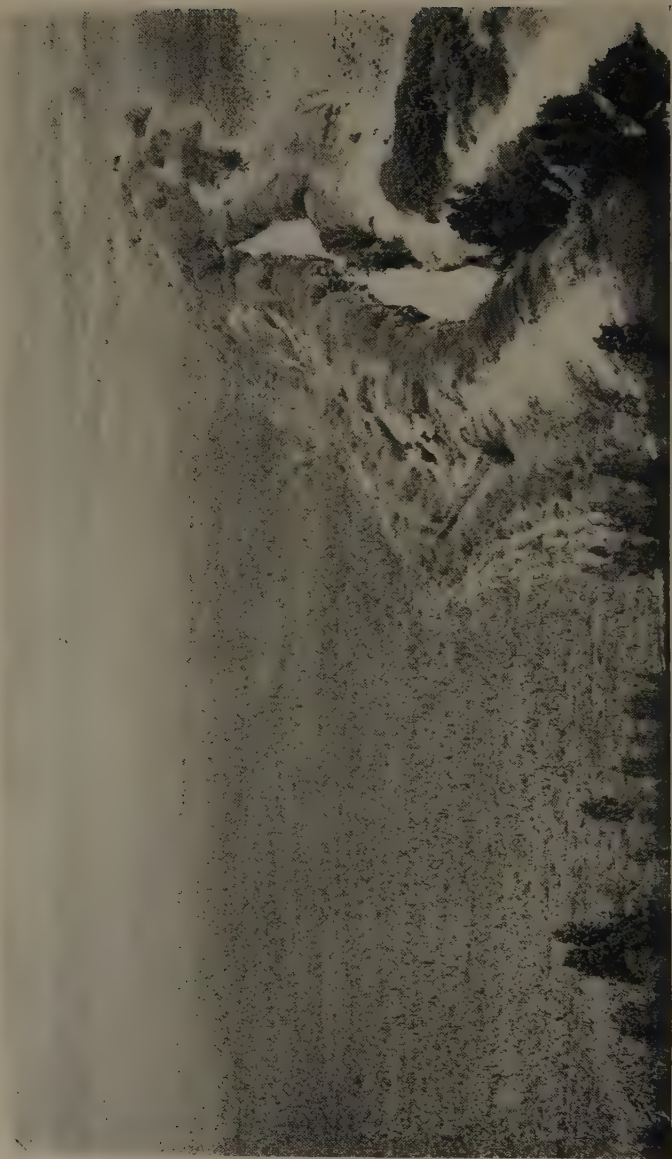
COAST ZONE :—Native labourers—The three natural zones—The coast zone—Irrigation—Coast rivers—Artesian wells—Sugar—Yield of—Exports—Conditions for growing cane—Cost—Brandy—Cotton—Exports—Irrigation of—Different kinds of—Rice—Values of—*Maiz*—Grapes and vines—Wine and brandy—Olives—Tobacco—Ramie—Coffee—Cocoa—Other products—General conditions—Land tenure.

UPLANDS :—Pasturage—Sheep and cattle—Cereals—*Flora*—Products—Potatoes—Fruits—Cattle ranches—*Llamas* and alpacas—Wool exports—*Vicuñas*—The *Cholos*—Land tenure—temperature.

FOREST REGION :—Elevations—Temperatures—Climate—Coffee—Cocoa—Cocaine—Timber—India-rubber—Rubber exports—Rubber-planting—Land tenure—Colonisation.

THE principal source of wealth in Peru at present is agriculture, and doubtless it will remain so, in spite of the great riches in minerals which the country contains. The native population is essentially an agricultural one, and the Indian labourer, whilst he lends himself, in the Cordillera region, to mining, is at heart a cultivator of the soil, and at the season corresponding thereto he leaves his mine-gallery, pick-axe, and bar, and repairs to his little *chacara*, or holding, to plant his potatoes, sow his alfalfa and maize, or to harvest it. Of course, the Indian labourer of this class does not produce much towards national wealth, or for export. He only supports himself and his family, but, nevertheless, in the coast regions it is his work which principally produces the cotton, sugar, coffee, and other articles of Peruvian export.

The conditions covering the agricultural industries in



THE COAST ZONE: IRRIGATED LANDS.

Peru are governed entirely by topographical considerations, and these have been fully set forth in previous chapters. The country, as has been shown, is divided into three main zones: the coast region, the Andine region, and the forest region respectively.

On the coast region all cultivation of the soil is dependent upon irrigation, as there is no rainfall. It is not to be supposed that this is an undesirable condition, for the growing of crops under irrigation permits of a certain regularity in methods and results, and independence of the variable conditions of constant atmospheric change.

The strip of land of the coast zone is some 1,400 miles in length, and of a varying width up to about 90 miles between the Pacific and the Andes. Within this area there are some forty-nine streams and rivers which descend from the Andes and cross the zone, generally torrential in character and of very varying volumes of water. Among the principal of these, beginning at the north and enumerating to the south, are: the Tumbes, Chira, Santa, Barranca, Rimac, Ocoña, Camaná, and Tambo. Although not of large volume, these rivers are to be depended upon as a means of irrigation, as they have an unfailing source in the snow-fields of the Andes.

The temperature of the coast region is never oppressively hot, from causes which have been previously described. The mean temperatures are as follows: Piura, in the north, 77° F.; Lima, in the centre, 66° F.; Moquegua, in the south, 63° F. The maximum temperature in Lima in the summer is 78° F., and the minimum in the winter, 59° F.

More extensive irrigation work is the main requirement for the increasing of the coast agriculture; but this requires capital, and the country is poor. There is certainly inducement for outside capital in this work. Some good projects of this nature are being carried out, notably in irrigation canal construction on the river Chira, where a canal some 34 miles long has been made. Most of the other valleys call for similar works, such as

those of Ocoña and Camaná. There is no doubt, also, that much is to be done in the building of storage reservoirs, as practised in other countries, for the utilisation of the surplus run-off. In addition to this, Artesian wells have been found to yield a good flow of water in some places, as might have been expected from the formation of the region.

Sugar is the primary product of the coast region. The following table shows the exports of this staple during the last few years, in metric tons.

1900	1901	1902	1903	1904	1905
112,220	114,640	115,510	125,660	129,880	161,850

The value of the export for 1905 was £1,833,660. The total production in 1906 was 169,418 metric tons, value £1,854,842. The production of sugar per acre, as compared with other sugar-producing countries, is given in Government publications as follows, in quintals of 101.5 lbs.

Country.	Weight of Cane.	Weight of Sugar.
Peru	700 to 900	56 to 80
Java	312	31.2
Sandwich Islands	290	29
Egypt	192	19.2
Louisiana	175	10.4

More than 14 per cent. of sugar is obtained from the best cultivated cane, and there is claimed for Peru a very high yield for her soil.

The cane grows to the height of 8 to 10 feet in twelve to eighteen months, when it is cut and crushed. It can be continually harvested during a period of from five to seven years without replanting. The cane can be cultivated up to an altitude of 4,500 feet on the Pacific slope, and as high as 6,000 feet on the eastern slope of the Andes. The estates are generally situated on the margins of the rivers. The most productive valleys are in the north, in the departments of Libertad and Lambayeque, and the estates in the valley of Chicama are large and powerful concerns. The system is generally



THE COAST ZONE: SUGAR CANE AT SANTA BARBARA.

adopted of keeping the cultivation of the cane and the elaboration of the sugar separate, as it is found to be more economical for the factory-owner to buy the cane from smaller cultivators who devote their whole attention thereto. Some proprietors make contracts to let their lands on a partnership arrangement, under varying conditions according to locality, of which the following may be taken as a general rate: (a) for good land with the necessary supply of water for irrigation, the rent or royalty would be about one-quarter of the crop. (b) If the proprietor provides oxen, tools, seeds, etc., the rent would be about one-half the crop. (c) If paid in cash the rent would be from £3 to £5 per *fanegada* of land—a local measure of about 7.6 acres.¹ This is equivalent to 8s. 6d. and 14s. per acre per annum. But the system generally adopted in the growing of sugar-cane and cotton is for the cultivator to sell the product to the proprietor at a price previously arranged, by weight, on the land or delivered at the factory. Most of the estates are traversed in all directions by light railways for easy transportation.

The cost of sugar at the mills is given as about 4s. 6d. per cwt. Peruvian sugar fetches about 3d. per cwt. more in the markets of the world than a standard taken at the price of Java sugar. Peru has signified its adhesion to the Sugar Convention, and the sugar duties have been reduced to the prescribed limits. The home consumption is about 28,000 tons per annum. Sugar is also produced in the inter-Andine region, and the *Montaña*, and is described under those headings. One of the principal products of this industry is the native rum or *aguardiente*, which, unfortunately, is too freely consumed by the Indian labourers, and is a serious and growing evil in the life of the community.

Among the largest producers of cane sugar in Peru is the British Sugar Company, with estates at Cañete—the Santa Barbara plantations and factory. This Company

¹ These particulars are from an official publication.

produces up to 25,000 tons of sugar per annum, involving the constant upkeep of 10,000 acres of cane. Large quantities of rum, also, are manufactured and sold chiefly in Bolivia. On this estate Japanese labourers are employed to a large extent, and this Company was the first to introduce them into Peru for this purpose. The advantage to the estate is that the Japanese are indentured labourers, and work throughout the year, whilst the native workers leave to cultivate their own lands at certain seasons. Further particulars of the sugar industry are given in the chapter devoted to commerce and industry.

Cotton is the next article of importance in Peruvian agriculture. More or less similar conditions of land, water, and climate govern its production, as previously described. The following table shows the exports during the last few years, in metric tons.

1900	1901	1902	1903	1904	1905	1906
8,000	10,961	13,400	15,250	12,935	17,386	20,000

About 2,500 tons were used in the native manufactories, in 1905.

The principal cotton-growing regions of the coast are in the departments of Piura, Ica, and Lima. The cotton is grown under irrigation, and there are large areas of land susceptible of cultivation and planting, when capital is forthcoming for the construction of further irrigation works. Owing to the fertility of the soil and the good climate of this region, two crops can be secured per annum.

Piura produces the remarkable cotton called vegetable wool, known in Europe as "full rough," and "moderate rough." This cotton is unique in its class, it is stated, and is used for mixing with wool in the manufacture of woollen goods. Three other kinds of cotton are grown—the sea-island, the Peruvian Mitafifi, and the smooth cotton from the American cotton seed. Mitafifi is of a similar quality to the Brown Egyptian. It has only been introduced into Peru of late years, and its cultivation has proved a success. The native cotton and the Egyptian are those principally

grown. Cotton gins are established in all the valleys, and the price charged to gin the cotton is moderate, and can be paid in kind or in money. Owing to the high price of cotton, the area under cultivation has increased by 15 per cent. in 1906, and is likely to increase much more.

Another of the coast products is *rice*. This is grown in the irrigated, or rather inundated lands in the departments of Lambayeque and Libertad. This rice is of excellent quality, and it is exceedingly prolific. The annual production is about 4,000 metric tons, which is principally consumed in the country. Rice is one of the principal articles of food in Peru, as in other tropical and semi-tropical countries. Rice cultivation requires but a small investment of capital, and yet brings in a very considerable profit to the planter, but artificial irrigation must be employed. The entire cost of preparing the land for seed, cultivation, milling, packing, etc., amounts to only half the price at which the rice is sold. Little ploughing is required, as the soil is turned up for a few inches; the occasional flooding of the ground being the chief requisite for ensuring an excellent crop.

Maiz, or Indian corn, is grown in the coast lands, and, indeed, in most parts of the country up to certain altitudes. All that produced is consumed at home, and there is no export, as it is always in demand. In places, three crops per annum are obtained. It is the food of both man and beast, and stands in the first rank of cereals, whilst the stalks are used as fodder. The national drink of the Indian population is made from *maiz* — the *chicha*, or *maiz*-beer, which is wholesome and refreshing, and is consumed in large quantities.

Grapes and vines can be cultivated all along this region. Some of the vineyards near Lima produce 155,000 gallons of wine annually, but there is room for improvement in the elaboration of these. The total annual production of wine is given as 2,200,000 gallons, and of Peruvian whisky, 770,000 gallons. This last is known as *pisco*, and is a white spirit of excellent taste and quality. It

is principally used for home consumption and for export to Bolivia. The native claret is good, as well as some of the white wines. The clarets contain 8 and 9 per cent. of alcohol. Many of the valleys watered by the coast streams and rivers produce wine, as Chincha, Lunahuana, Ica, Vitor, Majes, Andaray, Moquegua, Locumba, etc. Experienced viticulturists and grape-growers could do exceedingly well with the expenditure of small capital in these valleys of the coast. It has been stated by a good authority that the average crop of the grape-vine in Peru, even in bad years, is always superior to the normal average of the European grape-vine.

Olives are grown in some of these valleys, but more attention is needed. The annual export is about 70,000 lbs. The oil is used for home consumption, the demand being greater than the supply. More modern systems of cultivation and of refining the oil would give good results. The yield of the oil is about 30 lbs. to the 100 lbs. of olives.

Tobacco is grown on the coast and in the *Montaña*, but its cultivation has not been scientifically studied. Nevertheless, there exist numerous small plantations, and with proper attention and the introduction of good seeds the industry could be made very profitable, as the home consumption alone is very large. The upper-class Peruvian at present smokes Habana cigarettes principally, and they are somewhat expensive. About 900 tons are produced annually of native tobacco.

Other Products.—Ramie, or China grass, has recently been cultivated and found to be adaptable. Other coast products are the mulberry trees and the silkworms; the *higuerilla*, or castor-oil bean; the alfalfa or lucerne—the “motive-power” of Peru! for it is the principal fodder for beasts of travel and pack-trains. Coffee and cocoa are grown to some extent, but their true home is in the *Montaña*, on the eastern side of the Andes. Numerous varieties of fruits are produced, especially oranges and bananas, and other fruits peculiar to the country.

In general terms it may be stated that profitable cultivation under irrigation of all the foregoing products can be



THE COAST ZONE: CANE PLANTATIONS ON THE SANTA BARBARA ESTATE.

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carried on on the coast zone. Special study has been made of the matter of irrigation by the Government, and laws framed concerning it. Concessions are granted to capitalists for irrigation enterprise under favourable terms, and immigration is especially encouraged.

Of course, the portion of this zone which could be irrigated by the available quantity of water is a relatively small part of the whole area. There is, as ever in arid regions, only a certain amount of water available, but at present much of it goes to waste which, under a system of proper storage and conservation, would be profitably employed. And this condition will be brought about as the population increases, the requirements of whose food supply must so be filled. The cultivable extent of this zone is calculated at about 50,000,000 acres, of which only some 1,500,000 are under cultivation at present.

Leaving the coast zone we enter among the foothills, or *lomas*, a region whose elevation is comprehended between 1,500 feet and 2,000 feet above sea-level. Here light winter showers occur, and especially the heavy mists, known as *camanchaca*, both of which, through the moisture they afford, give rise to the existence of herbage and of some stunted trees. It is in these foothills that much of the cattle of the coast farms find food, but this pasturage dries up during a portion of the year, and the cattle are removed. Sheep, however, remain there throughout the year. The clay-sandy soil which forms these intermittent pastures is fertile, as evidenced by the vegetation during the mist season, but the lack of water prevents permanent fodder being assured. It is highly probable that some new forage seed could be introduced there, which would flourish at all times, and some experiments to this end are projected.

As we ascend the slopes of the Andes the land at first is more barren than the coast, until we reach the higher elevations, where the rainfall is normal and vegetation more abundant in consequence. Cereals are encountered now—wheat, barley, and oats, also *maiz*—which, however, are only raised for local consumption, the cost of transport to the coast almost precluding any outside market.

The *quinua* is a valuable product in this region also. This is a grain indigenous to South America, and grows spontaneously at high elevations and in poor soils, up to 13,500 feet or more. It is exceedingly prolific, and forms a plentiful and nutritious article of food. In appearance it is of lenticular form, about the size of mustard-seed, its botanical name being *Chenopodium Quinoa*. Of great value as a food-product, this grain might be advantageously introduced into Europe. The climate, temperature, and such conditions at elevations from 9,000 to 12,000 feet in the sheltered valleys are not unlike those of parts of England, and, indeed, a very similar *flora* is encountered. Ferns, nettles, violets, stitchwort, mustard, dandelions, lupinus, etc., are among the well-known wild flowers which we have seen in profusion within this belt. Wild geraniums and pelargoniums also are seen, and the mountain ash among the few trees which grow there.

Peru is the home of the *potato*, which comes to great perfection, and is one of the main articles of diet in this zone. Indeed, right up on to the high *punas*, the potato is cultivated by the Indians, and in fact it, with the *quinua*, is almost the only article of husbandry which will grow at altitudes above 13,000 feet. On the plains of the Titicaca basin, for example, the Indians almost live on potatoes, which they produce plentifully. The Peruvian yellow potato is unrivalled for excellence.

Afalfa, or Lucerne, flourishes up to an elevation of about 11,000 to 12,000 feet in sheltered situations. Above that the traveller has to depend upon dried forage or natural pasture for his beasts. *Maiz* also ceases to grow at about the same elevation.

The valleys of the Sierra at altitudes of 7,000 feet to 11,000 feet are generally fertile and enjoy a good climate, and, indeed, it is here that the towns and villages—the social centres of these sparsely-populated regions—are encountered. Land, produce, labour, and living, are exceedingly cheap, and the inhabitants calmly pursue their tranquil, if uneventful existence, untroubled much by the doings of the outside world. The market-places of these

towns are generally well stocked with produce raised in the region, or brought from the lower valleys. These include cereals, vegetables, fruits—apples, oranges, limes, grapes, nuts, and the delicious *paltas*, or alligator-pears; beef, mutton, cheese, butter, etc., as well as native clothing and boots.

There are not generally extensive plantations belonging to single landowners in these regions, as upon the coast zone. The *Cholo* Indian is a small landowner—a state inherited from the bygone Inca *régime*—and he cultivates his small holding, and does little more than supply his own wants. Nor does the form of the land lend itself to large agricultural areas or operations, consisting as it does principally of hill-slopes and narrow valleys, except the broad, bleak *punas*, where ordinary crops do not grow. There are, however, exceptions to this, as in the broad *campiñas* of such Cordilleran cities as Arequipa, Huancayo, Cuzco, Huánuco, etc. Mention has been made more fully of the small holdings of the *Cholos* in another chapter dealing with these people—the *andenés*, or cultivated terraces. The former inhabitants of Peru—the Incas and their subjects—were expert agriculturalists, and this industry was the basis of their national life. They constructed scientific irrigation works, and employed *guano* as a fertiliser on the land.

The cattle and live-stock industry of the Sierra region is an important one. If there are not great plantations, there are at least very extensive cattle ranches, which provide meat and wool for the whole country, and the latter article for export. On these uplands—generally at about 13,000 feet elevation—there are extensive pastures which maintain large herds of cattle, oxen, and sheep, *llamas*, *alpacas*, and *vicuñas*. Some of the ranches contain as many as 20,000 head of cattle, and 50,000 sheep. These *puna* cattle are not of large size, but are bony, with large, massive heads. The cows give a relatively small quantity of milk, which is, however, of exceptionally rich quality. Cross-breeding with foreign animals causes a greatly-increased supply. The *puna* sheep are also small, with

long legs, due probably to the extensive walking they undergo. The sheep are shorn once every two or three years. A British company with a large area of land has now introduced sheep from Patagonia to cross with the Peruvian sheep, with satisfactory results.

The *llamas*, the hoofed, ruminating quadrupeds, the small humpless animals of the camel family, found nowhere else in the world except upon these uplands of Peru and Bolivia, are bred in great quantities for their valuable wool, as are also the alpacas, of kindred nature. Both these animals live in a domestic state. The llama of large size is about $6\frac{1}{2}$ feet high to the head, and it is covered with a thick coat of rough wool. It is a remarkable beast in many ways, and is the most prized possession of the Indians of the uplands. It provides them with a valuable merchandise—its wool; it is a beast of burden, and does much of their carrying trade, bearing a load up to 100 lbs. in weight; it feeds itself from the natural pasture, as it journeys along at a pace of about 4 miles an hour, and its keep therefore costs nothing. The dried dung of these animals, known as *taquia*, as mentioned elsewhere, is collected in large quantities and used as fuel. The animal begins to work at the age of three years, and continues to about twelve years. It is exceedingly obedient and docile, and its well-known, peculiar, and graceful figure is encountered everywhere on these cold plateaus of the Andes.

The *alpaca* much resembles the llama, with a shorter head and neck. It yields a wool more than 8 inches long, and weighing about 6 lbs., every two years. This wool is of much value, about double that of llama or sheep wool. The centre for the trade in this product is Arequipa, whence the wool is exported to Liverpool, and Peru satisfies more than three-quarters of the world's consumption of alpaca wool. The export of Peruvian wool for the last few years has been as follows, in tons :—

1900	1901	1902	1903	1904	1905	1906
3,534	3,800	3,660	4,150	3,550	4,510	4,897

The value of the export for 1906 was £550,000.



THE UPLANDS : GROUP OF LLAMAS.

The *vicuña* is not a domestic animal, but roams in herds about the great tablelands and high bleak valleys in a wild state. Its colour is a ruddy yellow, and its fur, or rather wool, is valuable, being as fine almost as silk, and is worth about four times as much as that of the alpaca. Its flesh furnishes an excellent kind of "venison." The paco-*vicuña* is a cross between the *vicuña* and the alpaca which of recent years has been obtained. The animal is domesticated; its wool is of better quality and larger staple than that of its progenitors, being as long as that of the alpaca, and as silky as that of the *vicuña*. The raising of this animal promises to become an important industry.

The *Cholo* inhabitants of the Sierra weave all their own clothes, blankets, and *ponchos*, and make their own woollen hats. Some of the articles made of *vicuña* wool are true native works of art, and the *ponchos* which they weave from this wool are of such fine texture as to be rainproof. The agricultural methods, and the mode of life generally of these upland people, are the result of, and still bear the character of, those inculcated by their forbears, the Incas, in pre-hispanic days. This *régime* was benign and good, and, at least, has preserved the individual ownership of the land for the dwellers thereon to a large extent—a system more just and philosophical than that which obtains among the most enlightened of European nations, where the ownership of the land seems generally to be arrogated to the enjoyment of a few.

This great region of the Sierra, with its vast plains and pasture lands, stupendous mountains and unequalled scenery, great mineral wealth and matter of historic and archæological interest, extends the whole length of the republic, with a width varying up to more than 300 miles. The mean temperature of some of its principal valleys will be gathered by those of the following typical places: Cajamarca, 52° F.; Huaraz, 59° F.; Arequipa, 57° F. Some of these places are veritable sanatoria, with a splendid climate conducive to longevity.

Leaving now the bleak uplands and fertile valleys of

the inter-Andine region we descend the eastern slopes of the Andes towards the *Montaña*, or forests. This region covers about two-thirds of the area of the country, and although but little known, yet there is no doubt that it is the richest part of Peru, in an agricultural sense. Its elevation above sea-level extends from about 10,000 feet, downwards to 1,500 feet, and less, or the elevation of the water-level of the main Amazonian rivers in Peruvian territory.

There are two seasons, the wet and the dry; the former from May to October, the latter from November to April. The rainfall is, in places, heavy, the average being calculated at 70 inches annually. The temperature increases as we descend, but is not excessive. Examples are: the town of Chachapoyas, 40° to 70° F.; mean 62° F. Moyobamba, altitude 2,700 feet, mean temperature 77° F., with a fine and healthy climate. Huánuco, 74° F. mean annual; Santa Ana, 72°; Iquitos, 75° F. These lands of the Peruvian *Montaña* are healthy; epidemics are unknown, yellow fever is never heard of, and only in the hot valleys is the scourge of malaria or intermittent fevers encountered. It is generally erroneously supposed that anything connected with the Amazon must perforce be unhealthy, but however true this may be with regard to the swamps and inundated lands of the forest regions of Brazil, and the lowest part and hottest valleys of the Peruvian *Montaña*, it is not the case with that splendid zone of territory along the base of the Andes, traversed by navigable rivers, which constitute the true *Montaña* of Peru.

Agriculture in this region is but making a beginning. Of course, on the lower slopes and valleys of the Andes the inhabitants of the country are invading and planting, disputing with Nature the dominion of the vegetable world. But even this is yet only a drop in the ocean, and there is room for millions of inhabitants. The zone runs the whole length of Peru, and is from 300 to 500 miles wide. The principal articles of cultivation are, sugar-cane, cotton, coffee, cocoa, coca, bananas and numerous other fruits, tobacco.



THE MONTAÑA : A COFFEE PLANTATION.

The most valuable product of this region is india-rubber, later described. The areas containing the rubber trees are very extensive. In addition the tree is being planted and cultivated in some places.

The *coffee* grown in Peru is as good as that of famous kinds elsewhere. The principal points of production are in the *Montañas* of Cajamarca, Chanchamayo, Huánuco, Carabaya, etc. The plant grows with remarkable luxuriance, and the boughs are weighted with berries, fine crops being produced. It is stated that the average crop for the Chanchamayo valley is 800 to 1,000 lbs. per acre. The industry, however, in these regions does not expand or yield much return, due to the present lack of cheap transport, the freight costs eating up all the planter's profits. The export for 1905 was 1,028 tons, after covering the home consumption.

Cocoa is one of the plants which comes to greatest perfection in the Peruvian *Montaña*, where, in addition to its cultivation, it grows wild. The principal region of cultivation is in the neighbourhood of Cuzco, but little is exported—135 tons in 1905—as the home consumption takes it almost all. The price of the article in Europe is rising, due to increased consumption, and cultivation is being stimulated. In the territory corresponding to this zone, to the north, in Ecuador, cocoa to a large value is annually raised for export. Planting is on the increase in Peru.

The *coca*, the shrub peculiar to these regions and found nowhere else, is that which produces the drug cocaine. The alkaloid is manufactured at several places, at Otuzco, Huamachuco, Huánuco, Monzon, Tarma, Huanta, Cuzco, Phara, etc. Large plantations of the shrub exist, and a good deal of money has been made in the industry. But the demand is naturally limited, and the fluctuating prices of recent years has rendered the industry more precarious. In 1901, 10.7 tons of cocaine, and in 1905, 6.8 tons were exported, with about 1,300 tons of the leaves. The leaves deteriorate somewhat on the sea voyage. There are at present some twenty-five factories for making cocaine in

the country. The cultivation of the shrub is best carried on at an elevation of 5,000 to 6,000 feet. The seed is sown in January, and the seedlings are transplanted in the following year, and continue to yield crops for forty years. The leaves are picked, sun-dried, and packed in bales. These leaves are the *Cholo's* most valued possession, and with a small bag of them he is able to walk for days on long marches, with little or no other sustenance. The leaves are masticated with a little lime, which latter he carries in a small ornamental gourd. The stimulation and endurance these poor fellows derive from this source repeatedly comes under the traveller's notice when employing them in his expeditions, and it is found that an infusion of the leaves—a tea—is excellent after exhaustion, such as that engendered in crossing snowy summits on foot, or on long marches. Its too constant use is, however, undoubtedly stupefying on these people. It is a valuable article of commerce among them, and at times even takes the place of current coin.

The forest regions contain timber of various kinds, which, when means of getting it out are established, especially railways to the Pacific Coast, will be a source of wealth and industry. Among the best known are, cedar, mahogany, walnut, iron-wood, etc. Sawmills should be established, and outlet may be had down the navigable rivers.

Turning our attention now to india-rubber. The two kinds of rubber extracted in the Peruvian *Montaña* are the fine rubber, or *shiringa*, and the *caucho*, the inferior quality. The *shiringa* trees grow to a height of 60 to 75 feet; the *caucho* less. The former generally occurs in clusters of fifty to one hundred trees. The *caucho* is the principal source of Peruvian rubber at present, although the finer kind is beginning to be more exploited. The *caucho* is obtained by felling the tree and running the sap out, and this form of exploitation conduces to the destruction of the rubber forests, of which large regions have already been devastated, and special laws have been enacted against the practice. The *shiringa* trees are worked in



INDIAN HABITATIONS IN THE MONTAÑA;

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a different manner, paths being opened up in the forest between them. They are then worked in areas called *estradas*, which may contain from one hundred to two hundred trees. The *shiringuero*, or collector of this class of rubber, as he is termed in distinction to the *cauchero* (although the latter is often used as a general designation), makes from four to ten incisions in the trunk, beneath which small tin cups are hung to catch the sap. Of the finer kind about 1 ton of rubber may be obtained during the six months' work possible for these trees, for one *estrada*, which is about as much as one man can attend to. For the inferior kind, the *cauchero*-gatherer may obtain 5 to 10 tons in the year, according to conditions, but all these yields vary greatly. The *caucho* tree gives about 100 lbs. of rubber, but once only; the *shiringa* may give 11 lbs. in six months, and the work of extraction can be continued for twenty years. The sap is made to coagulate by being exposed to the astringent smoke of a burning palm-fruit. The value of india-rubber exported from all Peruvian ports, which paid the Customs duty, has been as follows:—

1903	1904	1905	1906	1907
£441.595	£670.137	£955.160	£1,000,000	£1,200,000

The *shiringa* or *hevea* rubbers pay an export duty of 8 cents per kilogram, and the *caucho* 5 cents.

The life of the native rubber-gatherer is hard, and he is exposed to danger and disease, the latter principally being the intermittent fevers, or *tercianias*, which he acquires in the swamps. Yet the climate of the Amazonian basin is conceded to be far superior to other places in similar latitudes, as the Congo, Zanzibar, Sumatra, etc.

Continual raids are made by the white rubber-gatherers upon the forest Indian tribes to obtain workers and women, and there is, as ever, a good deal of iniquity attending the production of india-rubber on the Amazon, in the territories belonging to Colombia, Ecuador, Bolivia, Brazil, and Peru—vast territories which it is impossible yet to efficiently police.

The great future of rubber in these regions, it is probable, will be in planting. Something has been done already on the Acre, Purus, Yurua, and Madera rivers, but it is small as yet. The same space occupied by fifteen or forty trees in a wild state could maintain one thousand to one thousand five hundred under cultivation, with corresponding economy of time and labour. The industry offers good conditions for investment of capital, but care must be exercised in the selection of the ground and other requisites, or failure will be incurred. The trees require from eight to ten years before they should be tapped. Grants of india-rubber forests and lands in the *Montaña* are to be obtained from the Government of Peru under easy terms. As regards ordinary *Montaña* land, generally, it may be obtained (1) under contract for colonisation; (2) by rental of 1 *sol*, or 2s. per *hectare* (equal to $2\frac{1}{2}$ acres); (3) by purchase, at 5 *soles* or 10s. per *hectare*; (4) and by free grants.

As regards the condition of labour and its supply, this has been spoken of in another chapter, descriptive of the inhabitants of the country.

It will have been seen from the foregoing chapters that agriculture covers a wide range in Peru, due to the great variety of climatic conditions. Almost every known product may be cultivated, and generally with profit.

Colonisation.—A study of the present and foregoing chapters will have sufficiently shown the conditions to be expected by the colonist who would make his home in Peru. He will encounter certain disadvantages, but not more formidable than those to be overcome in all new countries. If he settles on the coast zone and grows sugar-cane or cotton, or some other product, he will be nearer to contact with the outside world. Upon the uplands, or in the *Montaña*, he will be more isolated, and will experience greater difficulty in disposing of his produce. This isolation is the main circumstance on the adverse side. On the other hand, he will find land cheap, and will have a wide range of industries to choose from. It is to be recollected that Peru is both a young and a



THE MONTAÑA: A NEW SETTLEMENT.

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poor country at present, and the purchasing power of money is very great. With a small amount of capital, in any of the upland towns, land, houses, mines, or other property could be acquired very cheaply, and life lived in comfort, whilst well-meaning individuals could take a prominent and honoured part in the social life and administration of that particular community. Property is almost lying abandoned, it might be said, waiting the touch of money. For a small sum, great areas of *Montaña* land can be acquired, and the colonist may become a large landowner, if he so desire. To this is to be added the astonishing variety of produce which may be raised with a minimum of labour. Little known as they are at present, these vast zones of Peruvian territory will some day be of great value, and give subsistence to a busy population. The Government offers various attractive inducements to colonists to settle upon the soil and make Peru the scene of their work and energy.

CHAPTER XIX

MINERAL WEALTH

History of gold in Peru—Atahualpa's ransom—Inca gold objects—Metallurgy among the Incas—General conditions—Geology—Mineral-bearing zone—Classification of minerals—Methods of occurrence—GOLD—Alluvial gold-bearing rivers—Pampas and moraines—Spanish methods—Quartz lodes—Regions of occurrence—Present condition of gold-mining—Production of gold—Topographical conditions—Ore values—Old workings—Mining methods—SILVER—Production—Silver-bearing regions—Ores—Present condition of mines—Fuel—Native treatment of ores—Great lodes—Fuels—Quicksilver—Huancavelica—Chonta—Ore values—COPPER—Cerro de Pasco—Exports—Lead—Coal—Petroleum—Other minerals—History of mining—Total production—Mining claims and laws—Labour.

PERU has been richly endowed by Nature with mineral resources, and the production of the precious metals has been interwoven into her history. Under the Incas large quantities of gold were obtained from the alluvial deposits of the eastern slopes of the Andes, and the streams descending to the basin of the Amazon.

The Spaniards found the Incas in possession of what were undoubtedly very considerable stores of gold, principally in the form of decorations in temples, and of utensils of all kinds, as well as in the artificial forms of flowers and vegetables, and of life-sized statues and figures of men and animals, for the Incas wrought well in this metal, and used it lavishly, especially in connection with religious objects. The events of those times—the acts of Pizarro and his companions—form a remarkable page in the history of the yellow metal in the New World. The famous *rescate*, or ransom of Atahualpa, the last of

the Inca emperors, is stated by Garcilasso the historian to have been equal to a value of about three and a half million pounds. It will be recollected that Atahualpa promised to fill his prison chamber with gold—reaching up at arm's length to a line upon the wall, to which the metal should be piled—in return for his release. A great quantity of gold was brought from all parts of the empire, in the form of sheets and utensils, for this purpose, but the Spaniards, under the pretext of fearing a rescue before its completion, executed Atahualpa in May 1532, breaking faith with the Inca and tarnishing their name and fame by this act.

Among the gold objects of the Incas was the chain spoken of by Peruvian historians, made by the Inca Huayna-Capac. This gold chain could scarcely be carried by two hundred Indians, it is stated, and was said to be 233 yards long, and of corresponding thickness. This famous chain is supposed to have been thrown into Lake Orcos, near Cuzco. The older Spanish historians also state that the amount of gold buried by the Incas in different parts of Peru upon the advent of Pizarro is so vast that all that the Spaniards obtained is small in comparison.

It is not to be supposed that it was any easier, generally speaking, to obtain gold from the soil in those days than it is at present. The Inca's work was performed by large numbers of Indians, and, moreover, the gold found by the Spaniards was the accumulation of many centuries. The Spaniards themselves employed great bodies of Indians in cruel servitude for mining, and under these conditions the cost of winning it was low. Also, there is no doubt that considerable quantities of the yellow metal were taken from stream-beds, in the first instance, where it had accumulated since its formation, as even to-day it constantly reaccumulates, and is recovered by the Indians by the method of paving river-bars with areas of stones, and collecting the gold brought down annually by the freshets. The native miners say that they "sow stones and reap gold."

The Incas understood the smelting of silver-lead ores, which they performed in small furnaces called *guayras*—a Quechua word meaning the wind, for the wind was used as a natural blast, and thousands of these small furnaces, in some regions, were kept burning. The Incas and Aymaras also used copper tools, and this fact, indeed, is one of the links which supposedly connects the old civilisation of Peru with an Egyptian source.

Mining—gold, silver, quicksilver—was carried on actively under the viceroys, and a constant drain of treasure for Spain greatly impoverished the country, and the forced labour tended to reduce the number of its inhabitants. At the beginning of the eighteenth century the industry of mining fell into decadence, due to the wars of independence, and its regeneration was not brought about until 1876, when new mining laws gave proper title to mining property, and a School of Mines was founded in Lima. Under the New Mining Code of 1901 full security is afforded to the working of the mines and the possessions of the property, whether by natives or foreigners, and no doubt on the score of safe title need be entertained.

The minerals of Peru, as has been stated previously, are exceedingly varied and important, and form the basis of some of the principal industrial activities of the country, although the development of mining enterprise, in a modern sense, may be said to have only just begun. The exceptionally extensive occurrences of minerals in this part of the earth's surface is due to the existence and agency of the Andes, and the conditions brought about thereby; conditions which are shared in a greater or less degree by all the countries which come within the influence of this great range of mountains, as Peru, Chile, Bolivia, Ecuador, etc.

Whilst these mineral deposits are of much interest from their purely scientific point of view, it is their industrial utility which, of course, takes first rank. The geology of the Andes is a great book, as yet only partly read—a fascinating work of Nature, containing many surprises; but it is with the length, width, and permanency

of the mineral lodes, veins, and deposits, that the engineer and the capitalist must occupy themselves primarily.

The mineral-bearing region of Peru includes all that part of the country traversed by the Andes, which mountains in Peru run approximately north-west and south-east from the Ecuadorian to the Chilian boundaries, a distance of some 1,500 miles. The width of this zone is from 200 to 300 miles, and the list of minerals found within it almost exhausts those known to commerce, but those which are at present worked commercially are much less numerous. These minerals may be divided, as regard their modes of occurrence, into (1) lodes or veins, and (2) deposits. In the first category, and more or less in order of their relative importance, are, gold, silver, copper, lead, zinc, iron, quicksilver, wolfram, nickel, molybdenite, graphite, etc. In the second, gold, silver, copper, quicksilver, coal, salt, nitrate, borax, mica, manganese, etc. The rarer metals also are found, or their ores, as bismuth, vanadium, thorium, etc., and there is no doubt that special search will reveal these in quantities. Tin is the only metal of commerce which seems to be absent in bulk. It occurs, however, plentifully in Bolivia, to the east of the Peruvian line and of Lake Titicaca, where a very important industry has been developed.

Gold, as stated, is found both in lodes and deposits; the latter, alluvial. Indeed, gold is almost always found in conjunction with the ores of other minerals in Peru, as copper, silver, iron, etc. The richest part of the great mineral-bearing zone of Peru, as regards metalliferous minerals, is that verging towards the eastern side of the Andes; the western or Pacific side is less richly dowered, except in the case of gold ores, good and numerous lodes of which are found on the Pacific slope, in the granitic rocks of the foothills. Gold is not found in alluvial deposits, however, on the Pacific side of the Andes at all, nor in the rivers and streams which descend thence. There is one single exception to this, the river Chuquicara, which flows into the river Santa, debouching near Chimbote on the coast. Even this river, however, might be said to

belong to the scheme of the Amazon watershed, but that it has broken through the Cordillera at the termination of the Huaylas valley. The great alluvial gold-fields of Peru are all situated upon the eastern or Amazon watershed, except that in some instances they verge also upon the lake-basin of Titicaca.

The principal gold-bearing alluvial deposits are situated in the following districts, beginning at the north :—

The Marañon, near the Manseriche *pongo*, or rapids; the upper part of the Marañon at Chuquibamba; the province of Pataz; the district of Huánuco; Aymares and Antabamba, in the department of Apurimac; Paucartambo and Quispicanchi, in the department of Cuzco; and last, but most important of all, the provinces of Sandia and Carabaya, in the department of Puno.

Some of these places are exceedingly rich in *placer* deposits, where the gold has been, in a measure, concentrated naturally, in creek-beds and river-bars. Others of the deposits consist of enormous banks—moraines in some cases—of gold-bearing gravels and earths. Others are in the form of *pampas*, or plains, of auriferous soil. Worthy of especial mention are the great banks in the neighbourhood of Poto, province of Sandia, some of them miles in length and of gold-bearing material throughout; and the great Aporoma deposit, in the same province. Some of these gold-yielding deposits were worked by the Incas before the Spanish advent, and it was from these sources that they obtained the wealth of gold which Pizarro and his companions found in their temples and palaces. They were then worked in some cases by the Spaniards at a sacrifice of Indian lives by forced labour, and it was all this gold which went in the plate-ships to Spain, and of which, occasionally, the Spaniards were eased *en route* by Drake and other adventurers.

Various methods were employed by the native miners in obtaining the gold from the alluvial deposits, and some of these methods are still in use by the people of these regions of the eastern slope of the Andes. The first and simplest method was, naturally, the washing of the sands

of stream-beds in pans or other receptacles; and this is still regularly carried on, and considerable quantities of gold in dust and small nuggets extracted by the Indians. In some places, as upon the Upper Marañon and in the province of Sandia, this gold-dust is used as a medium of exchange between the Indians and the small shop-keepers. The streams are generally worked during the dry season, when the water is low, and boulders are then removed, and portions of the stream diverted to lay bare the bed. The gold does not necessarily become exhausted by these operations, but is annually brought down by the freshets from the mountain-slopes and the great alluvial deposits of auriferous gravel at the heads of the streams, as well as from the numerous disintegrating lodes or veins of gold-bearing quartz in the higher country. The "paving" of river-bars by the Indians has been mentioned, and this consists of preparing an area of the river-bed in a favourable place with a covering of carefully-laid stones, which act as "riffles," the gold-dust becoming deposited in the interstices by the water in flood time. When the water has subsided the stones are removed and the sand collected, yielding its harvest of gold upon being washed. These "gold farms," as they are termed, have their regular owners, and their working is a constant source of gain to the Indians. Whilst these stream-beds are often exceedingly rich in gold, as far as they go, it must be recollected that an industry which will enrich the patient Indian is not necessarily one which could be conducted at a profit by a company with a large capital; and it is the exploitation of the great alluvial deposits of auriferous material, or of the veins of gold-bearing ores, which must form the basis of large enterprises here.

A further method of obtaining the gold from the soil by the native miners is that of washing the earth of the flat, gold-bearing *pampas* or plains, such as are encountered in places over a considerable area in the high plateaus of Southern Peru. A channel or ditch is conducted from the nearest stream on to the auriferous area, terminating in a stone-paved sluice or waterway. The earth is then thrown

into this sluice, and the water suddenly admitted into the channel, whence it rushes with force through the sluice, carrying away the earth and leaving the gold-dust deposited between the stones. This method is, of course, similar in principle to that employed in most gold-yielding countries, but it appears to have been independently evolved in Peru. This process has been applied on a large scale in some instances, as in the case of the great Aporoma deposit, before mentioned. This, a large area of auriferous gravel, probably a tertiary river-bed, upheaved to its present level by geological action, was worked by the Incas, and subsequently under the Spanish viceroys. Long channels—some miles in length—were constructed, well-made and paved with stones, and conducted in places by tunnels through the ridges; and at the heads of these reservoirs were made, and water collected therein for the method of washing down the gravel banks by causing a strong current to impinge against the base of these—a system of “hydraulic” mining, such as is practised in modern times, but by water under pressure. These works at Aporoma still exist, and records show that thousands of Indians were employed there, and large quantities of gold extracted.

What was the origin of the very considerable deposits of alluvial gold in the Andes? There can be no doubt that they came, in large measure, from glacial action and erosion of the quartz and slate formation of the Cordillera in these particular regions, during former epochs of heavy rainfall and geological changes, such as described in the chapter on the orography of the Andes.

Some of these deposits are susceptible of working by the usual methods of hydraulicing with “monitors” and sluices, and by dredging, etc. Indeed, in one or two cases such work is being carried out, as at Poto, where five “monitors” are installed; but in most instances the mines are lying fallow, or worked in a small and desultory way by native Indian miners, who have developed some hydraulic methods of their own, as before described.¹

¹ For further particulars regarding these mines see the author's book “The Andes and the Amazon.”

The purely gold ores of the various districts of Peru are generally found in the form of ferruginous quartz. Among the principal districts where these abound are:—

On the western or Pacific slope of the Andes, Salpo, Otuzco, Huaylas, Yungay, Ocros, Chorillos, Cañete, Ica, Nazca, Andaray, Arequipa, etc.; and on the tablelands and eastern slope and *Montaña*, Pataz, the Upper Marañon, Huánuco, Chuquitambo, Huancavelica, Cuzco, Cotabambas, Aymares, Paucartambo, Santo Domingo, Sandia, etc., and a host of others throughout the mineral-bearing zone of the Andes.

The number of gold-mines upon which work is being done at present is small. Neither European nor American capital has, except in a few cases, grasped the possibilities for gold-mining in Peru, although it is probably only a question of time, and the dissemination of more knowledge about the country, before extensive operations are undertaken. The principal enterprises at present on hand or projected are:—

Mine.					Nature.	Company.
Santo Domingo	.	.	.	.	Lodes	American
Cotabambas	.	.	.	.	"	Peruvian
Andaray	.	.	.	.	"	"
Andaray	.	.	.	.	"	British
Pataz	.	.	.	.	"	Peruvian
Chuquitambo	.	.	.	.	"	British
Poto	.	.	.	.	Alluvial	Argentine
Aporoma	.	.	.	.	"	British
Inambari	.	.	.	.	Dredging	"

The amounts of gold coined at the Lima Mint since the coinage of silver was suspended in 1897 are as follows:—

1897 to 1905	.	.	.	.	.	£691,027
1906 to 1907	.	.	.	.	.	150,000

The value of the production of gold has been in recent years:—

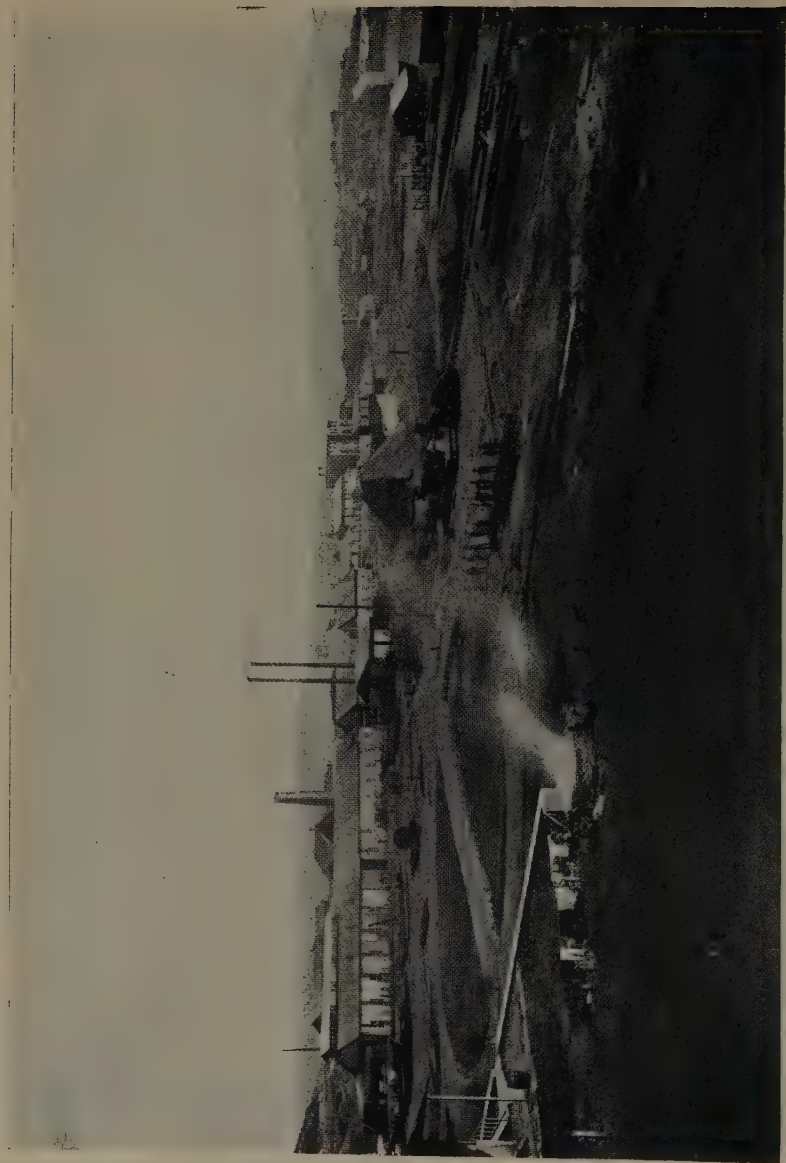
1903	.	.	.	.	.	£145,205
1904	.	.	.	.	.	75,102
1905	.	.	.	.	.	106,062
1906	.	.	.	.	.	170,355

These figures show that gold-mining in Peru is still in its early stages.

Whilst, as stated, the roads in Peru are bad, there is nothing to prevent machinery and appliances being taken in as ordinary pack-mule loads to almost any of the mining regions, as indeed they are, and have been, so taken. It is not to be expected that numerous and good roads could yet exist in a country of the topographical configuration of Peru, where mountain passes have often to be crossed at altitudes of more than 14,000 feet above sea-level. It must also be recollected that the very fact of the country being excessively mountainous brings with it some favourable conditions as regards the mines. For example, the gold-bearing and other lodes cross the hills and valleys for long distances, permitting their working by the economical means of driving in tunnels upon the ore-bodies at low levels, as contrasted with shaft-sinking in flat countries. Many of the metalliferous lodes in Peru are worked by tunnels run at depths of 2,000 to 3,000 feet or more below the outcrop at the summit. Also, the steep country and numerous ravines give rise, in many cases, to valuable water-power in the neighbourhood of the mines.

Very little development work has been done on these quartz veins, in a modern sense, so that their permanence in depth has not yet been established. However, the carving - out of the ravines, as before described, may be looked upon as a species of natural development work, and there is no doubt that the lodes are generally deep and constant. As to widths and ore-values, these, of course, cannot be described in general terms. But there are innumerable lodes of 3 to 8 feet in width, carrying from 1 to 6 ounces of gold per ton, often accompanied by silver. And great lodes up to 30 feet and more in width are also encountered, traversing the country for miles, and containing good grades of recoverable metal.

In many cases—indeed it is a proof of good values—these lodes are honeycombed at the surface with primitive workings, where the native miner, or the Spaniards and the Portuguese in years long since gone by, worked for



CERRO DE PASCO: NEW SMELTING WORKS.

The silver-bearing regions are principally upon the high, bleak plateaus and slopes of the eastern side of the Andes. Indeed in one or two cases mines are being actually worked through, or near, the perpetual ice-cap, at altitudes above sea-level of 16,000 and 17,000 feet. Few silver-mines are found upon the Pacific slope, although some are worked in the inter-Andine region, which is drained into the Pacific, as the valley of Huaylas, Salpo, etc. Following, are the principal silver-bearing regions, beginning at the north and bearing southwards: Salpo, Hualgayoc, Huari, Huallanca, Huaylas, Huaraz, Recuay, Cajatambo, Yauli, Cerro de Pasco, Morococha, Huarochiri, Huancavelica, Quespisisa, Castrovirrena, Lucanas, Lampa, Caylloma, Puno, etc., and a host of others within the mineral-bearing zone.

The silver ores are, principally, the red oxides, known locally as *rosicler*, the sulphides, and the argentiferous galena, or silver-lead. The oxide ores are often exceedingly rich, the lodes frequently widening out when least expected into great chambers, or pockets of ore, a single one of which may make the fortune of the miner. In the romantic history of Peruvian mining it has often been the case that poor miners, confident of ultimate success, and having ventured their last dollar in driving their gallery on day by day, have at length pierced the rich ore-body, and rendered themselves independent for the rest of their lives.

The present condition of most Peruvian silver-mines is that the workings have reached water-level, and the native miners' resources do not permit great expenditure in machinery, or for running long adits for draining. The workings have generally been made downwards in an irregular manner, following the ore, although in many cases well-executed adits or tunnels have been pierced at lower levels, in some instances of thousands of feet in length. Hundreds of these mines contain great ore-bodies, only the upper portions of which have been extracted, and they offer a rich reward to modern and systematic methods of working.

Argentiferous galena is very plentiful in some regions, and a favourable condition often underlies these—that good coal-beds are found in the vicinity, whilst water is generally plentiful. Wood and timber are, however, scarce, as the tablelands and the slopes where these mines principally exist are free from trees, except occasionally in the valleys, where stunted but serviceable timber is found in the *quishuar* trees.

The silver ores exist, generally, in the sedimentary and metamorphic rocks, although they are not confined to these. Their matrix is principally quartz. Great quantities of rich silver ores have been exported in years gone by, and are still so disposed of, as the smelting-works in the country are inadequate in capacity to their treatment. A good quantity is still treated in the numerous small native works, which exist in proximity to the mines. The methods followed have been those of lixiviation, and amalgamation with quicksilver, using more or less primitive appliances, which methods are now rapidly falling into disfavour, due to the superior advantages offered by the smelting process.

The ores in these native installations are subjected to chloridising-roasting in ovens, whence the material is conveyed to the tanks. This, however, has resulted often in a loss as regards the oxides, generally the richest constituent. Concentration of the ores on shaking tables is now being more employed, which, however, does not always save the oxides, and some experiments have been made with the oil-concentration method with this end in view. Silver, in Peru, almost invariably accompanies copper ores, especially the grey copper, adding largely to the values of these.

As previously stated, the metalliferous lodes in Peru are often strong and constant in all their dimensions of width, length, and depth. One of the most famous lodes in the country in point of size is the silver-bearing vein of Carahuacra, more than 3 miles long, with a thickness in places of 100 feet. This vein rivals those famous ones of Nevada, and of Mexico.

In their metallurgical operation the Peruvian miners

have not always been in situations where wood or coal fuel was to be commanded, but this was remedied by a natural adaptation to circumstances. Animal fuel—*taquia*—the dried dung of the llamas, was, and still is, used. This curious fuel contains great calorific value, and, surprising as it may seem, vast quantities were gathered and stored in warehouses and used in the furnaces, for ore-roasting. Another source of fuel was the grass of the uplands—the *ichu*—and yet another, in some parts of Peru, and largely in Bolivia and the mining regions of Tarapacá, is the *vareta*, the remarkable woody fungus growth like enormous loadstools without stems, which grow on the rocks. These curious vegetable growths, to which reference has been made, are as much as 3 or 4 feet in diameter, and full of resin. They are never found at a less elevation than about 12,000 feet.

Next in order, as being one of the "noble" metals, comes quicksilver. This is found in several places in Peru, the principal being: Huancavelica, in the department of the same name; Chonta, on the Upper Marañon, in the department of Ancachs, and some other deposits of lesser importance in the department of Puno, etc. The quicksilver is contained as sulphide of mercury, in cinnabar ores, although small quantities of native mercury are found in conjunction at times.

The mines of Huancavelica¹ are among the most important on the globe, little as they are now known to the outside world. They are, however, generally mentioned in most text-books of geology or mining. They have produced great quantities of mercury since their first working in 1566—the amount having been estimated as 60,000 tons. For a long period they produced as much as 670 tons of mercury per annum. The mine and city of Huancavelica was, during the Spanish-Colonial period, a hive of industry, and the quicksilver exported to other parts of South America, Mexico, etc., permitted the treatment of gold and silver ores in those regions. The mine was

¹ Visited and reported upon by the author.

administered under a viceroy, and was described by one of these functionaries in his report to the Spanish monarch as "one of the greatest marvels of the Earth." A considerable revenue was yielded to the Crown of Spain from this mine, but, owing to bad work, a large part of it suddenly caved in, burying alive, it is stated, some five hundred Indian miners who were working far below the surface, and whose bones remain there to this day.

The ores are treated on a small scale—for some work is constantly being carried on—in primitive furnaces, dried grass being used as fuel, and the sublimated mercury from the roasted cinnabar is condensed in small earthen vessels. The ore exists as an enormous lode or deposit of sandstone traversing a limestone formation, and is in places as much as 200 feet wide. The summit of the lode is some 2,400 feet above the level of the cathedral and river of Huancavelica, which itself is at an elevation of about 12,300 feet above sea-level.

The mines of Chonta¹ are of less importance, but have, nevertheless, produced a good deal of mercury. They are at present unworked, except on a small scale for silver. The deposit consists of a hard quartzite conglomerate, impregnated with cinnabar, horn-silver, silver sulphides and iron pyrites, and the region contains great possibilities.

The value of the Peruvian cinnabar ores varies greatly, as ever with this metal. Ores of 17 per cent. and 20 per cent. mercury exist, but the average for years past, and for ore in bulk, may be taken at $2\frac{1}{2}$ per cent., and up to 5 per cent. The present production of mercury in Peru is small, it having been, in 1905, only a few tons. Quicksilver and its uses were not known to the Incas before the advent of the Spaniards, but, nevertheless, they worked the mines on a small scale, in order to obtain the vermilion, which the women of the nobles used, in some cases, to colour their faces.

The value of the quicksilver production was only :—

1905	.	.	.	.	.	.	.	.	£340
1906	.	.	.	.	.	.	.	.	495

¹ Visited and reported upon by the author.

Copper is one of the metals which will now be a source of some considerable industry in Peru. Like silver, it is not found in any importance upon the Pacific slope, its true situation being the high, bleak *punas*, or tablelands, and some of the valleys of the inter-Andine region. The recent high price of, and consequent demand for, copper, stimulated search for deposits of its ores in the Andes, and whilst it is found all along the northern and central part of the great mineral-bearing zone, only a few districts so far have been put under exploitation. The principal of these are situated in the department of Junin, and are reached by the Oroya railway from the coast. They are, Cerro de Pasco, Yauli, Morococha, and Huayllay, which are the chief points of a most important copper-bearing region. The first-named, Cerro de Pasco, was the famous silver district before mentioned, and in years gone by copper was never considered as of sufficient value to warrant its working in Peru. The mines were worked, therefore, only for their silver contents up to recent years, when attention was drawn to the copper, and reports were made by English engineers and presented in London. However, the conservatism of British capitalists prevented these valuable mines being acquired, and they were purchased by Americans, who had been quicker to understand their value and possibilities. A great outlay has been made in equipping them with appliances for the treatment of 1,000 tons of ore daily, and a railway connecting with the Oroya line, whilst active development and drainage work were carried on simultaneously. Some difficulties have been encountered in the smelting of the ore, due to atmospheric conditions of the considerable altitude — 14,000 feet above sea-level. The ores are of good grade, and calculations are based on a minimum of 10 per cent. copper. The mines have been described by competent authorities, both British and American, as constituting probably the largest copper deposit in the world. It remains to be seen if they will become really great producers, which is highly probable.

Other of the copper-bearing regions are: Chimbote,



Cajamarca, Huancayo, Huaraz, Huallanca, Huancavelica, Ica, Arequipa, Andahuaylas, Cuzco, etc. The ores are generally grey copper ores, and chalcopyrites, and these as a rule carry good values of gold and silver. The principal smelting works of Peru is that at Casapalca, on the Oroya railway, which has been successfully at work for many years. Smelting works have also been erected at Huallanca and Huinac. The production of copper in Peru for the years 1903-1906 is as follows:—

1903	.	.	.	.	.	9,497 tons	£476,824
1904	.	.	.	.	.	9,504 "	504,604
1905	.	.	.	.	.	12,213 "	725,905
1906	.	.	.	.	.	13,474 "	996,055

Lead is found plentifully on the plateaus and eastern side of the Andes. It occurs principally as galena of high grade, accompanied by silver, and sometimes gold. Little attention, however, has been given to it, as freight costs to the coast are at present too heavy, and in the small *oficinas* it has been principally treated for its silver contents. It is found in nearly all those places enumerated as silver-bearing. The production for the year 1906 was 2,569 tons.

The ore of zinc is fairly plentiful. Iron ores are found in great masses in certain places, but their distance from the coast and from the coal-beds renders their profitable working as yet impossible. The principal places where iron is found are, Piura, the Huaylas valley, Aija, etc. The ore often carries gold and copper in addition.

Other ores and minerals, as previously stated, found in Peru, are, molybdenite, graphite, nickel, cobalt, bismuth, manganese, magnesia, salt, sulphur, mica, borax—the last three enumerated being plentiful in certain districts, as Sechura, Camaná, Arequipa, respectively. Coal and petroleum are found, the former in great abundance. Lignite and peat, also retinite, are found and used as fuel. Other valuable minerals of commercial use found abundantly are, alabasters, porphyries, jasper, marble of various kinds, kaolin, gypsum, ochre, etc.

The coal is found in the Andine region in vast areas of

tilted strata, often as fine anthracite, in enclosing quartzite walls. These deposits exist from the north down to the central part, and the south of the country, and must some day prove to be one of Peru's most valuable resources. On the coast very extensive coal-beds have recently been discovered, including those near Piura, Salaverry, Chimbote, Huarmey, and probably most important of all, the Paracas coal-fields near Pisco. Whilst the coal in the interior cannot yet be of other than local use until railways are built or extended, that upon the coast is exceedingly valuable as a source of fuel for steamers, and, indeed, for export to other points of the South American Pacific Coast.

Notwithstanding the plenitude of the material, the output has been small, the figures for 1905 being given as 75,338 tons, with a value of £100,000, and for 1906, 76,969 tons and £138,155. This output, it is probable, will rapidly increase in the near future.

Petroleum is one of the staple mineral products of Peru. The principal wells are at Talara and Zorritos, in the department of Piura. There are also extensive fields near Lake Titicaca, in the department of Puno; and in other parts of the country indications have been found. The recent output of the Piura wells has been as follows:—

Year.		Crude Petroleum.	Value.
1903		37,000 tons	£83,428
1904		38,683 "	87,037
1905		49,700 "	116,795
1906		70,832 "	242,542

The kerosene returns do not appear in the above, and this is consumed in the country, whilst some of the crude oil is used as fuel on the railways and in the factories.

In the chapter dealing with commerce, a detailed list of production and values of all minerals for 1905 and 1906 has been given. The total values for the years 1903 to 1906 may be recapitulated, as follows:—

1903		£1,282,080
1904		1,638,759
1905		1,828,535
1906		2,610,574



CARBONIFEROUS FORMATION AT PARACAS : PACIFIC COAST OF PERU.

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These values must be regarded as low figures, having in view the great mineral resources of the country, and a rapid increase may be looked for now.

The number of mineral or mining claims held, according to the last official register of 1907, is 12,858. Each mining claim is subject to a tax payment of 30 *sols*, or £3 per annum. The payment of this tax insures absolute ownership, which lapses on failure to pay it, the property reverting to the State. The size of the claim, or *pertenencia*, is 200 metres by 100 metres, equal to 2 hectares of land, or about 5 English acres. This is for claims taken up on veins or lodes; for that upon deposits, such as coal or alluvial gold, etc., the claim is twice that size, or 200 by 200 metres. The right of ownership is bounded by lines extending downwards at right angles to the horizontal, to unlimited depth. A single individual may acquire any number of claims. Borax and nitrate claims are subject to other measurements. (See also the chapter on commerce for other details.)

In general terms, it may be said that mining offers an attractive field of work. There still exist large areas of valuable mineral-bearing ground of which possession can be obtained simply by staking-out and paying the usual small fees to the authorities. These places are rapidly being taken up, and the official publications are full of announcements of new claims daily. The numerous and well-proved mines which have been worked for many years offer good inducement to large capitalists, and, indeed without capital little can be done.

As regards labour, there is sufficient at present, the *Cholos* of the Sierra being those who perform mining work in the regions of the Peruvian and Bolivian Andes. As the industry increases, scarcity of this labour may be expected. The wages paid are low—labourers earning 60 to 90 cents per day, and drillers 1 *sol* 20 cents, equivalent to about 2s. 6d; otherwise, by contract at an agreed price per metre. Work is generally carried on day and night, the miner often making as much as

nine days' work per week. He keeps up his strength by chewing *coca*, and when his contract is finished he retires to his small holding to cultivate the soil for the season. The Peruvian miner is a good worker, generally sober and respectful, and accustomed to the high elevations of the Andine regions. It would be difficult to replace him.

The mining laws are, on the whole, good, and framed with as much simplicity as possible, and with the least possible burden on the miner, the only requirements being the payment of the tax. Most of the mines in Peru are owned by foreigners, and indeed all encouragement is held out to citizens or subjects of other countries to make Peru the field of their enterprise and investments. Titles are perfectly secure, and are only forfeited if the taxes are not paid, as far as the Government is concerned.

CHAPTER XX

FINANCIAL, INDUSTRIAL AND COMMERCIAL CONDITIONS

Historical—Inca trade and industrial system—General storehouses—Inca foreign trade — Prehistoric maritime trade — Spanish monetary system—Quicksilver—*Coca*—Early Spanish exports to Peru—Spanish monopoly of trade—European buccaneers—Treaty of Utrecht—Early British imports—Rise of the *guano* trade—Evil influence thereof—Peruvian loan—Pardo's financial operations—Foreign debt—Payment of interest ceases—Public works era — The currency suspended — Paper money — Bondholder's Corporation—Re-establishment of silver currency—Revolution of 1894—Beginning of progress—Present conditions of finance—Table of State revenue—Table of State expenditure—Internal debt — Foreign credit — New loans — Finance Minister, Señor Leguía — Imports and exports — Foreign countries — Table of exports—Imports—Home industries—Textile industry—Cotton—Wool—Sugar industry and exports.

BEFORE entering upon the conditions of finance and trade in Peru during the present years it will be advisable to sketch briefly the history and growth of these elements. In pre-hispanic days the natives of the country under the Incas manufactured all the articles and commodities necessary to their simple life. Their system of transactions, notwithstanding their relatively high degree of civilisation, was only that of barter, no circulating medium or money being used. The commodities were brought to fairs and markets, and the Government established great depôts where supplies of cereals, clothing, and other products were stored, and these were distributed according

to the needs of the respective localities—a communistic system which worked to perfection as far as it went. Some districts produced *maiz*, others potatoes or wool, or arms, or clothing, which articles were paid as taxes into the general store and were drawn upon as required, so that no man's labour or manufacture went begging, and unemployment was unknown. In addition to this home system, trade by barter was carried on with neighbouring tribes which had not then fallen under the Inca *régime*, as shown by various articles freely found in the *huacas*, or burial-places, in parts of the country. There was also a maritime trade carried on, in the exchange of commodities with the peoples of Central America: performed by means of rafts, or *balsas*, formed of dried and woven rushes, called *totoras*, which were unsinkable, and capable of carrying several persons with a load of merchandise. These were furnished with masts and sails for navigation. Indeed, it was a large raft of this nature, laden with gold and silver ornaments, pottery, and woollen fabrics, which Pizarro and Ruiz captured near Tumbez, giving them the first notice of the inhabitants of that unknown coast.

Upon the Spanish occupation the monetary system was introduced, and gold and silver made into currency at the mints established at Lima and Potosi. At one period of colonial history quicksilver depôts were established by the viceroys, and the mercury given in exchange or payment for silver ores and labour. The mercury was produced at Huancavelica. Indeed the use of coins among the Indians was limited, and confined principally to the Spaniards; and even to-day, in remote regions, payments are often made in goods, especially in tobacco and *coca*, the latter being the article most prized among the Indians of the highlands.

The chief, and in fact almost the only article of export to Spain in early days was gold and silver bullion, and the ships came back laden with Spanish merchandise. But trade never acquired the importance it might have attained under a less exclusive control. For the Spaniards imposed troublesome regulations which seriously warred against any

natural law of supply and demand, as well as reserving to the mother-country the sole right and monopoly of supplying its colonies with merchandise, even a reciprocal trade between the various colonies being subjected to strict supervision. Of course, at that period—the sixteenth century—the Spaniards were a manufacturing people ; but later, when Spain lost her industries, the obstacles to trade which she imposed were a veritable disaster to Peru and other colonies, and, in fact, were one of the elements conducive to her loss thereof. The articles principally imported from Spain included arms from Toledo, cloth from Leon and Castile, candles for churches, and other ecclesiastical objects, oil, wines, leather, etc. Spanish trade in these regions was much harassed by the British and Dutch buccaneers, whose famous expeditions to the Pacific Coast were a feature of the times ; and Callao, the great maritime port of Peru, was a favourite centre for their depredations. The Treaty of Utrecht, in 1713, enabled more commercial intercourse to be carried on with the outside world, and formed a breach in Spanish monopoly in spite of the jealousy of the merchants of Cadiz. The English acquired the right to import a limited quantity of merchandise into the colonies, and—it must be recorded—that of introducing negro slaves, whilst the French were permitted to trade with Peruvian ports.

But on Peru becoming an independent state, British merchants were first in the field, and soon ousted their Spanish rivals, for Peruvian ports were declared open to all comers. This, however, caused the ruin of what home industry existed, which had only been able to live by the high protection afforded. Little benefit, however, was derived by the country as a whole from this new trade. The backward state of communication with the interior and general lack of intelligent financial direction or encouragement of agriculture or mining, weighed against an active commercial growth. But in the times of the great *guano* exports some considerable stimulus was given to the import trade, although little was brought in save articles of luxury, and lasting benefit

to the country was only brought about on a small scale. The clique surrounding the Government became wealthy, but machinery for producing industries was not imported, nor these established. Nevertheless, from the proceeds of the *guano*, railways were constructed, although at enormous cost, partly owing to the bribery and corruption among Public Departments and officials. Some banks and business houses, also, extended their operations to the interior towns, and the joint-stock company appeared for the first time in the history of Peru.

For the year 1877, before the Chilian war, the value of the foreign trade was somewhat over five and a half million sterling, the imports being slightly less than half, and the exports slightly over half of this amount. Of this sum there appears 280,000 tons of *guano*, whose value was £807,600, and 4,707,000 quintals of nitrate, worth £831,500, for the nitrate of Tarapacá was beginning to develop. It is very generally acknowledged by thoughtful Peruvians that the loss of this nitrate by the Chilian Conquest was in reality an advantage in disguise. For, deprived of the easily-won revenue from these sources, the Peruvians were obliged, so to speak, to take off their coats and go to work, bequeathing their prodigal habits to the Chilians with Tarapacá—say the Peruvians.

The financial history of Peru previous to this period shows a series of borrowings of money by loans in Europe, many of them reckless, and conducted by irresponsible administrations. The first Peruvian foreign loan was contracted in London, whilst the War of Independence was in progress, for the purchase of war material. Others followed, but in 1830, so small were the revenues, that the country was unable to meet the service of her debt in London, or at home. In 1847 the *guano* consignees took an important part in the financial life of the country, and the history of this period is far from edifying. As the State revenue from the increasing exports of *guano* grew, so did the expenditure, under lavish and corrupt administrations. To meet this, some of the public revenues were pledged as security for ruinous loans, which were

generally arranged for in London by successive conversions of the preceding foreign debt, guaranteed by the product of the *guano*.

Peru was thus principally living upon its capital, and it was not until 1866, thanks to the Finance Minister, Manuel Pardo — afterwards President — that a proper system of revenue by taxation was established. Following upon this, however, came a reactionary period, and the old habits of reckless mismanagement which the Peruvians had learned took deeper root than before. The era of costly public works under President Balta gave rise to further loans and compromises, and the Budgets again began to show the fatal yearly deficits. The foreign debt rose to more than thirty-five million pounds, the revenue of the *guano* was all absorbed, the railways were still unfinished, and the national credit was ruined.

Manuel Pardo, who became President in 1872, strove hard to bring some order out of the financial chaos; but it was impossible to avert disaster, and Peru ceased payment of interest on her loans in 1876. Desirous of avoiding the stoppage of the important public works under course of construction, Pardo obtained large loans from the banks, which at that period were empowered to issue notes to three times the amount held in cash. Stimulated by a fictitious prosperity brought about by the large loans, imprudent expansion was given by home and foreign merchants to commercial transactions, and in the absence of drafts corresponding to the *guano* values, which had always been used for payments against imports, the fatal course of exporting the metallic currency was resorted to, with a result that this became exhausted and was replaced by the bank-notes. The Government was now unable to meet its obligations with the banks, and these were obliged to declare that they could no longer convert their own notes into coin. General commercial failure followed, only a few of the best foreign houses remaining firm. At length in 1877 the Government assumed the responsibility of the banks' former emission, under a new loan and arrangement with these institutions. In this way paper money

appeared among Peruvian currency, amounting to one hundred millions of *sols*, which circulated with difficulty even at 10 per cent. of its nominal value.

The fall in the price of *guano*, and the Chilian war, with the loss of Tarapacá and the nitrate, followed, and the country's ruin was complete. The whole of the crushing weight of the foreign debt continued to rest upon Peru, notwithstanding the loss of the nitrate, and her bonds were quoted in Europe at ruinous prices. The foreign indebtedness reached the enormous sum of fifty-two million pounds, and it was necessary to find some remedy both for this and for the paper currency.

Relief from the debt was attained at length by the contract with the Corporation of Foreign Bondholders in 1890, as elsewhere described, whilst as to the notes, they continued deteriorating, until their acceptance was refused and the silver *sols* again became imported, or minted from native silver, and once more formed a currency. From that time onward, until 1895, small financial or commercial progress was made. Corruption in administration and lack of confidence in the country abroad prevented much expansion of trade or industry, and the Revolution of 1894 proved another setback.

That point, however,—1895—marks the beginning of an upward growth, and during the last ten years it is pleasing to show the contrast, and record the fact that the fiscal wealth of the country has more than doubled, and that the value of the imports and exports are greater than at any former period, not excepting the times of the *guano* and nitrate. The revenues, moreover, are derived from properly - established taxes, State industries, and Customs House dues, a favourable feature being that the tax and other revenues are larger than those from the Customs House. The following table shows these sources and amounts of revenue for the ten years 1896-1905 :—

PERUVIAN STATE REVENUE, 1896-1905, IN £.

Revenues.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Customs . . .	693,722	636,785	673,411	638,229	742,242	858,522	808,199	853,192	1,011,579	1,053,992
Taxes . . .	199,474	212,596	221,855	232,285	59,619	105,367	460,863	517,414	711,067	837,798
Salt Monopoly .	8,229	37,334	56,972	49,553	59,999	62,392	63,528	81,552	70,738	86,213
Government Wharves	4,734	4,967	6,474	6,127	5,246	4,224	4,663	4,990	4,123	5,894
State Telegraphs .	3,283	3,750	3,619	4,475	5,215	5,593	5,968	8,859	7,534	13,786
Post Office . .	24,072	24,215	25,612	25,179	28,144	37,353	31,001	51,540	60,122	58,852
Depot of Explosives	.....	76	101	139	113	126	126	88	25	.....
Sundry Receipts .	65,685	108,221	132,654	133,361	411,992	461,560	108,959	96,664	125,383	121,788
TOTAL £	1,128,715	1,217,251	1,329,947	1,370,137	1,312,571	1,535,136	1,483,305	1,614,298	1,990,568	2,178,320

Taken from the Report of the Minister of Finance.

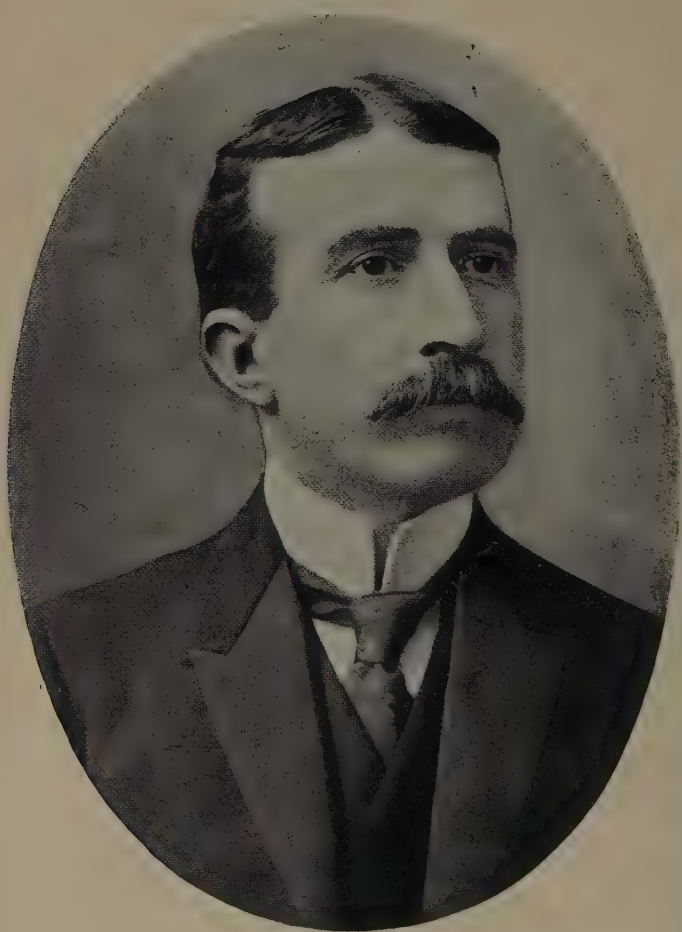
Fractions have been omitted.

The continuous development of the various departments of the Administration are shown in the following table:—

PERUVIAN STATE EXPENDITURE, 1903-1907.

Year.	Congress.	Home Office.	Foreign Office.	Bureau of Justice and Instruction.	Bureau of Finance.	Bureau of War.	Bureau of Fomento.
1903 . . .	£42,698	£309,686	£74,161	£146,748	£501,838	£375,838	£82,799
1904 . . .	45,349	404,791	86,629	186,404	641,621	477,139	265,894
1905 . . .	48,020	432,257	67,230	217,146	621,191	532,486	303,644
1906 . . .	87,972	458,365	63,214	415,139	619,548	517,234	344,915
1907 . . .	87,972	473,026	63,321	440,661	667,704	580,649	365,933

Fractions have been omitted.



SEÑOR AUGUSTO LEGUIA.

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The total receipts for fiscal revenue in 1907 were calculated at £2,679,266, an increase of nearly £173,000 over the previous year. The total revenue of the republic, adding the income of the various departments or states of the interior for 1907, was £3,298,344.

The country's internal debt in 1906 was represented by bonds to the value of £2,660,645, bearing interest at 1 per cent., payable every three months, and by stock amounting to £665,995, not bearing interest, but with a special fund provided for its amortisation. These interests and payments have been met with regularity.

Her credit abroad having become established again, Peru was able to contract a loan in 1905 for the sum of £600,000, for the purpose of increasing her navy and the protection of her ports. This loan was placed with the Lima branch—recently established—of the German Transatlantic Bank, at 6 per cent. interest and 90 per cent. net rate of emission for the Government. A further loan of £3,000,000 is under negotiations at 6 per cent. interest, and 92½ per cent. rate. This is to be devoted to railway construction.

One of the principal moving spirits in Peruvian financial matters is Señor Augusto Leguia, who has occupied the post of Minister of Finance since the Candamo Administration, and Peru owes much to this clever business man.¹

Turning now to the general trade of the country, it is seen that the development of mining, agriculture, and other industries is causing a steady advance in the quantity and value of the imports and exports. These, for the years 1902-1906, are shown in the following table:—

IMPORTS AND EXPORTS, VALUE IN £

	1902	1903	1904	1905	1906
Imports	£3,428,300	3,783,380	4,298,000	4,329,150	4,999,046
Exports	3,703,971	3,676,788	4,066,640	5,757,350	5,817,232
	<u>£7,132,271</u>	<u>7,460,168</u>	<u>8,364,640</u>	<u>10,086,500</u>	<u>10,816,278</u>

¹ Elected President, and assumed office in September 1908.

The principal countries with which this trade has been maintained are as follows:—

Country.	Imports.			Exports.		
	1903.	1904.	1905.	1903.	1904.	1905.
United Kingdom .	£1,486,440	£1,569,363	£1,542,240	£1,538,400	£2,014,200	£2,991,200
United States .	576,900	772,900	705,500	492,290	380,000	527,340
Germany .	448,320	701,520	674,160	327,200	342,370	402,315
France .	187,220	264,500	257,500	100,430	301,630	369,750
Chile .	220,110	217,900	246,980	541,000	428,050	805,880
Italy .	147,820	154,200	170,000	12,300	16,000	13,000
Belgium .	231,070	198,150	173,850	(?) 1,500	18,230	115,570
Spain .	24,170	30,880	33,380	36,030	18,510	17,080
China .	62,750	11,400	6,060	.....	.....	.....

It will be seen how largely trade with Great Britain exceeds that with other countries. Germany and the United States are, however, actively developing their trade with Peru, and it is probable that these figures will show a marked change in future years.

Some of the principal articles of Peruvian produce and export have been given in the chapters relating to minerals, and to agriculture, but these are included also in the following table, which will show the variety and extent of the articles exported, with their weights and values.

PERUVIAN EXPORTS FOR 1905.

Products.	Weight in Metric Tons.	Value in Sterling.
Sugar	134,234	£1,833,567
India-rubber	2,539	913,989
Copper ores	31,242	588,919
Wool	4,510	481,128
Cotton	17,386	412,625
Silver	7,101	310,929
<i>Guano</i>	73,369	285,729
Hides . . . . .	.....	142,826
Cocaine . . . . .	.....	116,590
<i>Coca</i> leaves	1,340	89,836
Gold coin . . . . .	.....	77,669
Hats	20	58,715
Silver coin . . . . .	.....	51,807
Coffee	1,028	40,106
Other ores	2,890	34,874
Tobacco	189	31,227
Cotton goods	319	27,116
Alcohol	1,581	20,560
Gold ores	816	13,093
Petroleum	7,853	12,258
Live animals . . . . .	.....	11,693
Straw . . . . .	.....	11,659
Charcoal	2,642	10,611
Cocoa	135	9,382
Liquors	161	8,580
Salt	4,744	8,231
Carry forward		£5,603,719

PERUVIAN EXPORTS FOR 1905.

Products.	Weight in Metric Tons.	Value in Sterling.
Brought forward		£5,603,719
Wines	362	£7,306
Bones	84	5,467
Rinds and barks	138	5,324
Fruit	188	3,623
Meat	98	3,577
Drugs	58	2,462
Grain	195	1,943
Maize	303	1,815
Fats	44	1,554
Peruvian bark	64	1,406
Honey	43	1,280
Live plants and seeds	37	1,221
Wax	13	1,099
Soap	...	484
Fish	...	306
Matches	...	192
Sundries	...	77,725
TOTAL		<u>£5,720,503</u>

The principal articles of import and their values for the years 1904 and 1905 were:—

Articles.	1904.	Value in £. 1905.
Cotton goods	589,755	612,367
Woollen „	232,626	223,500
Linen „	25,172	42,097
Jute and hemp goods	99,755	67,938
Metal-work	872,600	948,636
Machinery	206,150	164,068
Drugs, etc.	128,125	130,833
Timber, etc.	191,409	157,522

The value of the imports and exports for 1906 are given in a previous table.

As regards the home industries, the principal of these are agriculture and mining, which have been fully described in the chapters devoted thereto. Manufacturing is principally confined to the elaboration of some of the agricultural



BRITISH INDUSTRIES IN PERU: SANTA BARBARA SUGAR FACTORY

products, as cotton, sugar, rum, chocolate, cocaine, wine and liquors, and also the weaving, on a small scale, of blankets, *ponchos*, hats and mats by the Indians for their own use, and in the large mills.

The textile industry is the most important—the weaving of cotton and woollen goods. The earliest modern looms for the woollen manufacture were introduced in 1861, and for cotton in 1874. Previously there had existed primitive looms from the most remote times, for weaving was an advanced industry under the Incas; and, as stated above, the Indians of the uplands still weave their own garments, except the calico, which is made in the modern mills of Peru. At present there are, throughout the country, seven manufactories of cotton goods: five near Lima, one at Ica, and one at Arequipa. The total number of looms is fifteen hundred, and the production, in 1905, some 23,000,000 yards of material. These consume some 2,000 to 2,500 tons of cotton annually, and they can produce nearly all the material required by local demand. The raw material is superior to that employed in the foreign article, and is stronger and lasts longer than the imported, and the importation from Great Britain has fallen off considerably. Drill, cashmeres, towels, etc., are also produced. The capital invested in these mills is about four hundred thousand pounds, and they give employment to some fifteen hundred hands, whose average wages are about two and sixpence per day.

There are four manufactories of woollen goods in Peru, at Cuzco and Lima. The Santa Catalina factory near the latter city produces about 200,000 yards annually in cloth and cashmere for army use. It also produces blankets, counterpanes, and woollen underclothing, thousands of dozens of which are produced and find a ready sale. The factory employs some seven hundred hands. The Vitarte mills, near Lima, owned by British capital, are among the most important of these enterprises.

The sugar-cane plantations and factories for producing sugar are among the most solid and extensive of the

industrial enterprises in Peru. The regions where these *haciendas* are found are principally Chiclayo, Pacasmayo, Chicama, Santa, Supe, Huaura, Chancay, Rimac, and Cañete. The sugar estates in these valleys are generally furnished with modern machinery and appliances of British manufacture. Some of them have an output of sugar annually of 25,000 tons. Several of the most important of these estates are owned and worked by British capital, as described in the chapter on agriculture.

The following table shows the sugar exports for the years 1900-1905.

Years.									Weight in Metric Tons.
1900	.	.	.	.	.	.	.	.	112,222
1901	.	.	.	.	.	.	.	.	114,637
1902	.	.	.	.	.	.	.	.	117,632
1903	.	.	.	.	.	.	.	.	127,674
1904	.	.	.	.	.	.	.	.	131,958
1905	.	.	.	.	.	.	.	.	134,344

The total production in 1905, including brown, white, and molasses, was 161,851 metric tons, of which 27,507 tons were for home consumption. The total production in 1906 was 169,418 metric tons, with a value of £1,854,842.

The conditions as regards the cultivation of sugar are given in the chapter on agriculture.



SANTA BARBARA FACTORY : CENTRIFUGALS.

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CHAPTER XXI

FINANCIAL, INDUSTRIAL, AND COMMERCIAL CONDITIONS

(*Continued*)

Existing minor industries—Textile—Paper, matches, flour mills—Wheat imports—Provisions—Tanneries—Liquors—Cigarettes—Chocolate—Cotton seed—Cocaine—Chemicals—Furniture—Lithography—Mechanical—Electric—Electric Trust—Required minor industries—Textile plants—Dairy products—Cold Storage—Wines, etc.—Paper, glass, etc.—Smelting works—Timber-cutting—Railway- and road-building—Hydraulic power—Sea-ports and their exports—Callao—Docks—Maritime movement—Steamers and sailing vessels—Other ports—Iquitos—*Guano*—Table of exports—Mining industry—Table of mineral production—Mineral claims—Peru and manufacture—Coal-fields and water-power—Labour—Production and consumption—The currency—Its history—Early systems—The Spanish coinage—Bolivian money—Silver currency—Gold standard established—Gold currency and circulation—Banks—Insurance offices—Taxes—Salt monopoly—Peruvian Corporation—Railway receipts—*Guano* account—Commercial houses—British, American—Mining enterprises—Italian, French, German merchants—Small shop-keepers—Custom dues.

AMONG the minor industries and manufactures of the country are the following:—

Hats.—Straw hats, known commercially as “Panama” hats, are made in the department of Piura, at Catacaos and other places, as well as cigar-cases, hammocks, etc., from the fine *toquilla* straw or grass, and this gives employment to many thousands of men, women, and children. Woollen hats are generally hand-made by the Indians of the uplands, although a modern factory was started in Lima in 1898.

Paper.—Ordinary and brown papers are produced in a factory in Lima.

Matches.—Near Lima two factories exist, one in connection with the Chicago Match Company.

Boots, etc., are generally hand-made, but a factory has been started by native capital.

Flour Mills.—The Santa Rosa Company has a modern flour mill near Callao, and there are numerous primitive mills in the interior. The imported wheat—about 40,000 tons annually—comes from California and Australia. In Lima the manufacturer of vermicelli and kindred preparations is extensive.

Biscuits.—A modern factory in Lima of these articles does a good business, owing to the heavy Protectionist tariff.

Lard.—The manufacture of lard is one of the oldest industries in Peru, and some thirty thousand hogs are fattened and slaughtered annually for this purpose. The home consumption is about 50,000 tons, which is partly satisfied by imports from the United States.

Tanneries.—Numerous establishments exist, but the industry has not reached a high standard.

Wines and Spirits.—Heavy protective duties have developed a considerable industry. As to wines, some of these are very good, and the low price works against adulteration. Not so, however, with spirits, and all kinds of liquors are concocted in Lima and Callao, and in attractive bottles and labels are palmed off on the public. The annual production of wine is about 2,200,000 gallons, and of *Pisco*, or white grape spirit of good quality, 770,000 gallons.

Beer.—The Peruvians are acquiring more and more the custom of taking beer, and there are breweries in Callao, Arequipa, Cuzco, and Lima, the best being that in the last-named city, the Backus & Johnston Company, owned by British capital.

Cigarettes.—Five important factories in Lima, and others in Callao, Arequipa, Piura, and Trujillo, prepare tobacco and make cigarettes, giving employment to a large number of women

Chocolate.—There are several factories for making this article in Lima and Cuzco. Notwithstanding the advantageous conditions for growing the *Cacao* in the country, there is not sufficient produced to meet the demand, and it is imported from Guayaquil.

Cotton Seed Oil.—Several factories exist in Lima, and others in the cotton-growing centres. The oil is used for mining lamps, and its by-products for making soap and oil-cake.

Cocaine.—There are some twenty-three manufactories throughout the country in the regions where the *coca* shrub is grown. The Peruvian annual production practically satisfies the world's demand for this article.

Chemical Industries.—Little is done in this branch beyond the manufacture of cocaine, benzine from kerosene, and ammonia from coal-gas, with some medicines from Peruvian plants. Many articles might profitably be produced—among these, sulphuric acid, varnish, dyes, etc. Alcohol, of 40° only costs 2½d. per litre, and it is plentifully produced.

Furniture is manufactured to some extent.

Lithography and book-binding and the production of photogravures has been fairly well developed.

Mechanical industry has advanced to a certain extent, principally, however, in connection with the railways. The main factories are in Callao and Arequipa; the shops of the Oroya and Southern lines respectively. There are other lesser establishments, where engines and machinery are made and repaired, and founding done; and in Iquitos there are several smaller factories of this nature.

Electricity.—Some excellent work in the field of power and lighting has been done in Peru. Hydro-electric installations have been constructed on several of the rivers descending from the Cordillera across the coast zone. The principal of these is that upon the river Rimac, where two generating stations exist, at distances of 16 and 25 miles respectively from the capital, utilising the rapid fall and flow of that river. About 13,500 h.p. are developed, and the electric railways from Lima to Callao and Lima

to Chorillos are worked thereby, as well as the lighting of the city and near-by towns. The whole of these enterprises, which were separate originally, have been formed into a "trust," although of Peruvian capital. There is another hydro-electric station at Trujillo.

Some of the minor industries which might be established and which could be expected to give returns on the money invested in them, are:—Cultivation of textile plants, as ramie, jute, agave, etc., and the extraction of the fibre, both for export and manufacture for ropes, mats, sacks, etc. Good contracts can be made with agriculturalists on the coast zone by steam plough owners, and Artesian well-sinking is becoming important in the same region. Butter and cheese factories with modern appliances are wanted. Cold storage chambers established at the coast towns and seaports should give good results, especially in receiving meat and produce brought in for consumption by the steamers. The cultivation of the vine and making of wine and spirits is increasing. The industry of hide and skin dressing is making progress, and there is room for establishing a number of factories. Skins abound in Peru, from those fitted for ordinary wear up to the finest quality for Morocco goods, gloves, etc., and there is no necessity to go outside the republic for this material. There is a call for the manufactory of good class paper, glass, and other kindred matters; and smelting-works for ores are required at the various centres of mineral production. Mills for sawing timber in the forest regions are required. Peru has vast forests, as has been elsewhere described, and the exploitation of these should now attract capital. Pottery, nails, preserves, brushes, chemical products, and other matters are all required, and should be manufactured in Peru.

Railway and road-building are among the imperative needs of the country, and in many situations these undoubtedly offer returns for capital invested. With good roads automobile services could be carried on between numerous towns in the most important valleys, and act as feeders to the railways. The development of hydraulic



THE COAST ZONE: STEAM PLOUGH AT WORK AT SANTA BARBARA.

power should become an important industry as the country develops. The configuration of the Andes gives rise to very favourable conditions in this respect—of high altitudes, rapid falls, and short trajectories. The perpetual ice-cap and snowfields of the Cordillera, the heavy rain-storms and the numerous lakes upon the great tablelands at such high elevation make of the Andes a vast hydraulic machine, where power is constantly stored up by Nature and delivered in such form as may be utilised as mechanical energy by man.

There is a considerable trade between the various seaports of Peru. The principal of these ports have been enumerated elsewhere. From the most northerly—Tumbez and Payta—tobacco, hats, cattle and charcoal, etc., are shipped to Callao, and petroleum from Talara and Zorritos; from Pimentel and Eten, rice, sugar, alcohol, hats, and cattle; from Pacasmayo and Salaverry, rice, sugar, alcohol, *coca*, starch, and hides; from Chimbote, Santa and Casma, salt, minerals, rice, and *maiz*; from Huarmey, minerals; Supe and Huacho, sugar, alcohol, swine, etc.—also minerals; Callao is the great central maritime port of Peru and of the national commerce. The docks, which cost £2,000,000, allow the largest ships to go alongside. Out of the population of Callao, of 30,000, some 10,000 are foreigners. The maritime traffic, or number of vessels, entering or clearing at Callao was:—

1905.

	Arrivals.	Sailings.
Steamers	399	395
Sailing vessels	1,004	1,036
TOTALS	<u>1,403</u>	<u>1,431</u>

1906.

	Arrivals.	Sailings.
Steamers	518	517
Sailing vessels	924	931
TOTALS	<u>1,442</u>	<u>1,448</u>

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The tonnage of the steamers corresponding to the following countries was :—

Arrivals.	1905.	1906.	Sailings.	1905.	1906.
Peru . . .	46,117	31,649	Peru . . .	44,784	34,228
Great Britain	496,764	507,309	Great Britain	503,852	502,876
Germany . .	167,450	172,063	Germany . .	166,758	182,608
Chile . . .	159,160	168,272	Chile . . .	158,831	170,070
France . . .	12,236	27,898	France . . .	12,236	21,364
Italy . . .	2,933	.....	Italy . . .	2,933	.....
Norway . . .	11,191	7,487	Norway . . .	13,445	7,487
United States	9,450	3,420	United States	8,708	2,678
Belgium . .	2,983	5,938	Belgium . .	2,933	5,938
Denmark . .	5,419	.....	Denmark . .	5,419	.....
Russia . . .	1,658	.....	Russia . . .	1,658	.....
Guatemala .	750	.....	Guatemala .	750	.....
Colombia . .	65	.....	Colombia . .	65	.....
Japan . . .	.....	13,266	Japan . . .	.....	10,457
	916,176	937,302		922,422	937,706

The tonnage of the sailing vessels that arrived at the port of Callao in 1906 was the following: arrivals 174,165 tons, sailings 163,365 tons, whose nationality was, Great Britain 102,236 and 90,995, Germany 27,642 and 29,756, Norway 17,280 and 19,546, Peru 15,231 and 16,038, United States 7,068 and 3,693, Denmark 4,143 and 2,492, Chile 500 tons.

This makes the total of the maritime traffic of the port of Callao, excluding the smaller vessels, for the arrivals 1,111,467 tons, and for the sailing 1,101,062.

The port of Cerro Azul exports cotton seed oil, cotton seed, wine, swine, and hides, also alcohol. Cañete is the port for the shipping of sugar from the estates of the British Sugar Company. Tambo de Mora occupies first place in the export of native whiskies and wines, and Pisco follows with the same articles. Lomas and Chala ship cattle, Mollendo exports gold and provisions, and receives merchandise for the interior and Bolivia, *via* the Southern Railway. It also exports the Bolivian tin, and rubber from the Peruvian region beyond the Andes. Ilo embarks olives, olive oils, and wines.

GUANO AND OTHER EXPORTS 279

The river port of Iquitos on the Amazon is an important centre, and its commerce is rapidly increasing, values being as follows :—

1905	£1,474,777
1906	1,669,737

The greater part of this is formed by the rubber trade, as described elsewhere.

The *guano*, the famous deposit of phosphates on the Peruvian coast and islands—especially the Chincha Islands, near Pisco—constituted, as stated, the former great source of Peruvian wealth. This was until 1883. At present the quantities remaining are much reduced, but there are still numerous small deposits in the Archipelagos along the coast. Some of these deposits are covered with sand to a depth of five or more feet, and others are almost unknown. The *guano* is not worked out, and will be a source of revenue for years still. The web-footed birds which contribute to the formation of the *guano* deposits—known in Peru as *alcatraces*, *gaviotas*, etc.—are seen in myriads, peopling the islands and rocks, or flying low on the surface of the sea like a darkening cloud-shadow, sometimes extending in a flight miles in length. In the cancellation of its external debt the Peruvian Government transferred to its creditors 3,000,000 tons of *guano*, and it is a British Company—the Peruvian Corporation of London—which exploits this. The *guano* receipts are shown on a subsequent page.

The following summary shows the values of the principal articles of animal and vegetable products exported, with their weights, for the year 1906 :—

Product.	Weight in Metric Tons	Value in £.
Sugar	169,418	£1,854,842
India-rubber	2,756	1,037,834
Cotton	20,000	556,859
Wool	4,897	549,986
Coca	2,842	130,325
Cocaine	6	79,071
Coffee	1,120	42,754
Hides . . . . .	.....	180,668

Mining.—Next to agriculture the mineral industry is the most important, and this has been fully dealt with in the chapters devoted to it. It is still very backward, except in some instances, and more capital, modern machinery, and better roads are urgently required in connection with it. The following table shows the quantities and values of minerals produced for the years 1905 and 1906:—

MINERAL PRODUCTS, 1905, 1906.

Minerals.	Weight, Metric Tons.		Value in £.	
	1905.	1906.	1905.	1906.
Copper . . .	12,213	13,474	725,905	996,055
Silver . . .	191 ³	230 ³	729,444	972,958
Crude Petroleum .	49,700	70,832	116,795	242,542
Gold . . .	677 ⁶	1247	106,062	170,355
Coal . . .	75,338	76,969	100,000	138,155
Lead . . .	1,476	2,569	6,107	35,125
Salt . . .	21,039	20,226	21,038	20,226
Borates . . .	1,954	2,598	17,586	23,392
Antimony . . .	.....	927	.....	8,526
Sulphur . . .	.....	1,830	.....	2,745
Bismuth . . .	12	.....	5,000	.....
Quicksilver . . .	155	2804	340	495
Nickel . . .	1778	.....	258	.....
			1,828,535	2,610,574

The mining industry is growing year by year, and, as shown, embraces a wide range of minerals. The production of copper may be expected to increase largely in the next returns, due to the operation of new smelting furnaces of considerable capacity which have been installed in various parts of the country, and which may be expected to produce as much as 50,000 tons of copper annually, thus bringing Peru next to the United States and Mexico as a producer of this metal. The production of gold, coal, silver, and petroleum is also largely on the

increase, as well as of the other minerals enumerated in the table, with one or two exceptions.

The value of the mineral output of 1903 has exactly triplicated itself in that of 1906, as given in the foregoing table. The results were obtained from the working by 160 various owners, of 1,200 mining claims, in 67 different establishments, with a total of 13,961 miners and workers. The total number of registered tax-paying mining claims up to the end of the first half-year of 1907 is 12,858, which yield to the Government in taxes, annually, the sum of £34,068.

Peru cannot be considered a manufacturing nation. The small population and the difficulty of means of communication at present prevents this. But the great and varied extent of the raw material of all kinds produced or produceable in the country, and the cheap labour, as far as it goes, are elements conducive to manufacturing progress in the future, as are indeed the sources of motive-power and fuel contained in the soil, as the extensive coal-fields and abundant water-power. In its present state, even, the republic produces sufficient, in most cases, of all articles of food and clothing necessary for local consumption. The general conditions for manufacturing are by no means uninviting for the investment of foreign capital.

Currency. — The history of the Peruvian monetary system is a chequered one, like those of most Spanish-American countries. At the time of the proclaiming of Independence in 1821 Spanish gold and silver coins were legal currency, and the republic in 1822 brought out coins of similar weight and fineness, but substituting thereon the national coat-of-arms and motto in place of the royal bust and Spanish devices. These circulated until 1836, when, by reason of the Peru-Bolivian Confederation, the Bolivian money was admitted as currency, although of inferior fineness. This arrangement was, however, a bad one for Peru, and it was abolished later. In 1863 monetary reforms were instituted, the decimal system being established, and the double standard of gold and silver being

Peru and London has branches in Callao, Arequipa, Piura, Trujillo, Pacasmayo, Chiclayo, Cerro de Pasco, Ica, and Cuzco. The name of Señor José Payan must be mentioned in its past and present history as one of the capable and moving spirits of this bank. The German Bank likewise has branches in Callao and Arequipa, and appears to be extending its influence and operations considerably. The Bank of Deposits and Consignments owes its existence to a law setting forth that all judicial and fiscal deposits should be concentrated in a single institution, and the bank's capital was subscribed by the other Lima banks. It performs the part of a Clearing House. The banks are authorised to issue mortgage bonds in addition to their ordinary operations, and this has had a beneficial effect on the value of landed property. Fair profits have in most cases been earned by the banks.

Insurance.—Among other of the joint-stock companies in Peru, insurance companies play a part. Previous to 1895 business of this nature was carried on entirely by the agencies of some fifteen foreign companies. A law was passed at that date requiring that foreign agencies should make a deposit of £3,000 in order to guarantee compliance with their obligations, but these companies, notwithstanding that they were making profits, declined to conform with the stipulation, and liquidated their business and retired from the field. Native offices then set up and did successful business at much lower premiums than the foreign offices had exacted. In 1896 the foreign offices re-established themselves, until eleven agencies disputed business with the native companies, the competition again bringing down premiums. In 1901 another law was enacted, stipulating that any foreign insurance company or agency must possess a paid-up capital of £20,000, of which 50 per cent. should be invested in landed property in Peru and 50 per cent. in bonds of the public debt or the municipalities, or other institutions, which stocks should remain as guarantee for compliance with obligation. The foreign companies again declined to submit to the law, and again liquidated and abandoned the field, only one remaining.



ON THE OROYA RAILWAY.

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That the business is a good one is shown by the fact that good dividends have been paid by the five main Peruvian insurance companies since 1902, varying from 24 per cent. to 35 per cent., whilst large reserve funds have been formed. The total dividends paid in the five years 1902-1906 have amounted to 420 per cent.

Tax-Collecting.—The collection of most of the taxes is entrusted to a company which was formed for that purpose after the Chilean war, and the system has given good results. The contract between the Government and the company authorises the latter to expend annually £84,000 in administration and expenses, and to retain a commission of 1 per cent. on the net product. The table as shown in page 286 is useful as showing the steady upward tendency of the business of the country, adduced by taxes collected, from 1901 to 1906 on the matters under this company's administration.

Salt Monopoly.—This is also worked by a company under agreement with the government, all salt works in the country being fiscal property, and the company having sole right of working and sales. The company receives a commission of $2\frac{1}{2}$ per cent. The net product from the revenue of the monopoly in 1906 was £70,120.

Peruvian Corporation.—This important financial institution, with headquarters in London, has already been described. It exercises great influence on the economic matters and development of Peru, and now that the disagreements of past years between it and the Government are settled, greater progress is to be expected. Receipts from the railways which the Corporation controls have increased considerably of late years, due partly to the working of mines by North American capital in the zone of the Oroya railway, but also to the general improvement and development of the country. There is an improvement of 70 per cent. on the railway receipts since 1901, whilst the net revenue has advanced by nearly £55,000, equal to more than 30 per cent.; whilst there is an improvement also in the guano account, which in 1901-1902 was £114,196, and in 1906-1907, £186,279.

NATIONAL TAX-COLLECTING COMPANY.

Taxes.	July 1901 to June 1902.	July 1902 to June 1903.	July 1903 to June 1904.	July 1904 to June 1905.	July 1905 to June 1906.	Totals.
Tax on spirits	£198,623	£201,853	£248,053	£380,273	£387,664	£1,416,468
<i>Id. id.</i> Tobacco	99,136	107,194	152,685	143,269	184,894	687,180
Stamps and Registering	27,031	23,563	24,935	28,747	29,059	133,337
Legacy Duty and Tax on Sales of Property	19,165	18,016	21,615	24,805	28,359	111,961
Opium Monopoly	41,724	40,702	36,879	33,991	29,003	182,302
Storage of Tobacco	495	444	403	364	386	2,094
Income Tax (since March 1902)	900	8,459	12,106	15,430	16,581	53,477
Stamped Paper	4,011	19,634	20,049	21,632	24,008	89,336
Custom House Paper	1,202	6,375	7,134	7,572	8,415	30,099
Paper for Fines . . . . .	.....	91	117	119	162	491
Sugar Tax (since April 1904)	.....	.....	4,388	65,852	82,686	152,927
Tax on Matches (<i>idem</i>) . . . . .	.....	.....	8,950	25,676	30,628	64,355
Tax on Mines	15,989	17,782	24,176	26,674	31,628	116,251
	£408,279	£444,118	£560,595	£774,410	£853,480	£3,040,883

Fractions have been omitted.

The working expenses of the railways have increased, and with the growing traffic improvements in the permanent way and rolling-stock will call for more outlay. It is to be recollected that the principal railways ascend exceedingly heavy gradients, and are subject to landslides in certain sections, and that operating expenses are heavy in these sections. The property of the Corporation is one of very great value, and with good management its returns ought to increase year by year. There is no doubt that Peru is on the eve of industrial development, and the Corporation should benefit largely by this. The following table shows the expenses and receipts of the railways controlled by the Corporation, for the years 1890-1907. (Peruvian Statistics.)

PERUVIAN RAILWAY RECEIPTS.

Year.	Gross Receipts.	Working Expenses.	Net Receipts.	Rate of Exchange.	Net Receipts in Sterling at such rate.		
	Peruvian Sols.	Peruvian Sols.	Peruvian Sols.	d.	£	s.	d.
1890-91	1,840,008	1,244,733	595,275	37	91,771	11	3
1891-92	2,487,292	1,514,468	972,824	34	137,816	14	8
1892-93	2,284,865	1,535,847	749,018	29	90,506	6	10
1893-94	2,522,920	1,749,888	773,032	25	80,524	3	4
1894-95	2,577,064	1,622,621	954,443	24½	97,432	14	6
1895-96	3,027,760	1,992,937	1,034,823	24	103,482	6	0
1896-97	3,230,479	2,331,317	899,162	22¾	85,233	2	6
1897-98	3,324,335	2,181,449	1,142,886	23½	113,098	2	5
1898-99	3,528,334	2,277,201	1,251,133	23½	124,461	12	9
1899-900	4,251,504	2,503,180	1,748,324	24½	175,743	0	1
1900-901	4,887,367	2,900,476	1,986,891	24½	200,758	15	1
1901-902	5,017,754	3,238,271	1,779,483	24	177,948	6	1
1902-903	5,436,000	3,412,695	2,023,305	24½	204,438	2	1
1903-904	5,874,109	3,680,740	2,193,369	24½	221,621	13	8
1904-905	6,636,505	4,306,583	2,329,922	24½	237,846	5	5
1905-906	7,667,581	5,268,422	2,399,159	24½	244,914	3	5
1906-907	8,581,700	5,300,400	2,281,300	.....	232,844	0	0

GUANO ACCOUNT.

1901-1902	.	.	.	.	.	.	£114,196
1902-1903	.	.	.	.	.	.	152,599
1903-1904	.	.	.	.	.	.	176,776
1904-1905	.	.	.	.	.	.	186,684
1905-1906	.	.	.	.	.	.	178,225
1906-1907	.	.	.	.	.	.	186,279

Commercial Houses.—In the lists of imports and exports before given it is shown how largely trade with Great Britain predominates at present over that with other countries. There are, nevertheless, not a great many British houses in the country, nor is the British colony by any means the most numerous. Among the principal firms are: the Peruvian Corporation; the Pacific Steam Navigation Company, whose headquarters are, however, in Valparaiso; the British Sugar Company, with large estates; the Vitarte Cotton Mills; the Tamboreal Sugar Estates; the West Coast Cable Company, a branch of the Eastern Telegraph Company; Messrs Graham, Rowe and Company; Duncan, Fox & Company; W. & J. Lockett and Company; Backus & Johnston Brewing Company; the Casapalca Smelting Company, etc.

The British commercial name is generally well respected in Peru, although there have been acute questions between the Peruvian Corporation and the Government, as also with the Steamship Company and the Government. Among the commercial houses with the best reputation for fair dealing must be mentioned that of Graham, Rowe & Company.

As to mining, there is, so far, but little British capital in the country. British enterprises in this field have often been badly managed, which is unfortunate, as few countries offer greater opportunities for profitable mining than Peru, as shown elsewhere. Among the few enterprises existing at present are the Caylloma Silver Mines, with an extensive property; the Casapalca Smelting Company—a valuable and extensive business which has been an example of successful mining enterprise; the Huinac Copper Mines, near Huaraz; the Inca Gold Development Corporation, with dredging interests; the Inca Exploration Syndicate, with hydraulic mines and the Exploration Company of London, with various interests. The Inambari-Pará Rubber Company has also been established, chiefly with British capital.

American interests in Peru are represented principally by the Cerro de Pasco Mining and Railway Company, a concern



LIMA: UNITED STATES LEGATION.

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which has invested a very large capital in copper mines; the Santo Domingo Mining Company; and the New York House of Grace—an important firm—and other enterprises. The capital invested in Peru during the last few years by American interests is calculated at about £5,000,000, and it is probable that it will rapidly increase, as a strong mining and developing element from the United States is entering the country. Indeed, it seems probable that American interests will attain considerable importance in Peru in the future, for there is an aroused interest about the country in the United States, and no doubt, geographically speaking, the commercial field tends to fall into the North American sphere. The Americans as a nation are popular in Peru, but as individuals are not always liked or understood. Diplomatically, also, the country has been well represented, whilst British influence has not been strongly exercised. The Americans are putting forth efforts now to capture the trade of South America from their European rivals: it remains to be seen what the result of this commercial competition will be. It is generally considered by Peruvians that the completion of the Panama Canal will greatly improve their intercourse with the United States.

The Italians largely control the trade in articles of food in Lima and Callao, and form the most numerous foreign colony. They work hard, and save, and often become wealthy in a few years. They acquire wealth in the country rather than bring it in, as may be said to be more the case with British and American interests.

The French merchants deal principally with articles of luxury: silks and clothing. The British devote themselves to wholesale trade, in Manchester goods, hardware, and other manufactures. The Germans perform similar work and are assiduously cultivating and extending their trade. They import large quantities of cheap articles for the masses. The retail merchants in the interior are generally Peruvians, who distribute the merchandise imported by the large houses.

In these Spanish-American countries there are to be found in every town small European and Asiatic shop-

keepers, as Italians, Austrians, Chinamen, etc. These are useful elements in the country, although a good deal of falsifying of goods takes place, and a living is often made by short weight and high prices with their numerous Indian customers. The poor Indian is exploited by almost every one.

The great need of Peruvian commerce is more capital, Not, however, to increase the articles of import at present. for this is overdone, especially in matters of stuffs and clothing, by the numerous houses of all nationalities engaged in the business, but in the development of the soil, in the growing of raw material and its manufacture, and in mining and railway construction.

Customs.—A considerable number of articles—those which are for purposes of industrial development—enter Peru, duty-free. Among these are all machinery and appliances for mining and agricultural industries, including rails and rolling-stock for railways, steam and electrical motor machinery. On the free list, also, are coal, naval articles, books and utensils for teaching. The average dues on taxed articles may be taken at 33 per cent. of their value, but there is a very long list of things which pay 10 to 20 per cent. only, and the official valuations are kept low. Wines, liquors, coffee, tea, cheese, butter, etc., pay 65 per cent; linen, silk, cotton, woollen, and hardware pay 40 per cent; groceries about 65 per cent.

The export duties are few: 3 per cent. on gold in dust or bullion; forty cents per dozen on "Panama" hats exported from Payta, and five cents and eight cents per kilogram on india-rubber, according to quality.

Labour.—The conditions as regards labour have been dwelt upon in the chapters upon the various topographical zones. The labourers upon the coast zone, in the plantations and mills, are natives, Chinamen, Japanese—which latter are now being imported as indentured labour—and negroes or the descendants of negroes. As to mechanics and trade workers generally, the Peruvians fulfil the conditions necessary for these occupations well, but there is



GROUP OF JAPANESE LABOURERS ON THE SUGAR PLANTATIONS, SANTA BARBARA.

room for skilled foreign workmen. In the Andine region the labourer, both mining and agricultural, is the *Cholo* inhabitant, as elsewhere described; whilst in the forest regions the Indians living upon the river margins are those drawn upon. As the various enterprises of the country increase, a scarcity of labour may be looked for, and, indeed, is already encountered in some cases. The remedy lies in creating such conditions that the native population shall more rapidly increase; and, temporarily, a period of Japanese immigration is to be expected, although Europeans are much more desirable.

CHAPTER XXII

TRAVEL NOTES

Main routes—The interior—Objections to travel—Object of travel—Philosophical reflections—Comparisons—Typical travel—Roads—Mule-trains and their burdens—*Arrieros*, or muleteers—Lodgings—Famous mule-fables—Clothing for travel—Saddles—Mules and horses—Pace of native beasts—Cost of beasts—Feeding—Native bridges—Inca bridges—Hospitality of *cura* and *gobernador*—Peruvian hospitality—Churlish Indians—Landscapes and effects—Nightfall on the Andes.

THE principal routes of travel in Peru are, naturally, along the coast from port to port by means of the steamer lines which perform this service; and by the lines of railway which penetrate the interior, upon which trains run, in most cases, daily.

With regard to the interior places more removed from these easy means of travel there is not much movement, as is but natural. A country divided by so formidable a barrier as the Andes tends to have a stationary population. Those who dwell in the coast cities prefer not to leave them for the interior, except under strong necessity, whilst the dwellers in the country regions make visits to the coast cities at rare intervals. The people of the coast, accustomed to their mild and equable climate, do not love to journey into the—to them—inclement highlands of the Andes, whilst the *Serrano*, inured to his brisk and tonic temperature, rather dreads the—to him—enervating atmosphere of the littoral, where he often falls a prey to light tertian fevers—the *paludismo* of the coast valleys, or of the *Montaña*.

As regards foreigners, the interior of Peru is not

a land which is likely to attract the ordinary tourist or mere pleasure-seeker, notwithstanding the grandeur of its scenery. The only foreign travellers encountered there are those who have come upon some special mission; possibly to examine mines or india rubber forests; perhaps to climb virgin Andine peaks—of which there are many yet unpressed by the foot of man; perhaps to examine the numerous ruins of the Inca period which lie scattered about the inter-Andine regions. But these are few. Peru is a little known field as yet, though worthy of a better reputation and a wider knowledge.

Let us, then, in following our scientific or commercial errand over this broad land, note down some few experiences and hints of travel there, in so far as they may be of interest. In such a country as this the traveller must be endowed with some attributes of constancy, humour, kindness, and, above all, the spirit of the true traveller—that *universalism* which sees what of value there is in primitive man and sterile nature, the poor Indian and the bare wilderness, and acknowledge for them some of the good which the city dweller and the cultivated garden do not necessarily monopolise. And the quality of comparison is useful: the traveller in the Andine uplands, in considering the poor Indians and their wretched habitations, may recollect that such conditions are not unknown in Europe; the bogs and shanties of Ireland, or other portions of the fringe of Britain, are not beautiful or civilised! Moreover, if the people of the Peruvian interior are poor, there is no acute misery such as great cities present. The Indian agriculturalist, wresting his scanty living from his small holding, is a far less trying spectacle than the pallid and starving slum dweller of a manufacturing city of Europe or North America. These are reflections which will present themselves: the compensating clauses in our observations.

The really typical part of travel in Peru is that in the Sierra, or Andine uplands. Here you experience the novelty, and charm, and the discomfort, of being thrown much on your own resources. The first impression which

will be borne upon you is that the term "road" is, in the Andes, a very relative one. The roads are, as a rule, simply mule-trails, which curve and zigzag, and ascend and descend the most extraordinary places. After many years' acquaintance with the mode of travel in Spanish America—Mexico, Peru, Chile, etc.—the traveller will come to regard these roads with a certain amount of indifference, but to the novice they are, to say the least, interesting. Perhaps you are, for example, ascending the side of a narrow valley: on one hand roars a torrent some hundreds of feet below; on the other arises an uncompromising rock-wall, or other steep and broken ground. The track just admits of your beast going along, whilst your outside leg hangs over the abyss. The tinkle of a bell strikes on your ear, and looking up, you observe on the opposite cliff, where the road winds round the valley, a pack-mule train coming along, and it dawns upon you that this has to pass you somehow. However, you ride on to meet it—you could not turn round, probably, if you desired to—and you know there must be some spot or zigzag where you can turn aside. In any case you have your *arriero*, or mule-driver, with your pack-mules, who will see to this.

Down comes the army of pack mules, preceded by a horse or mare with a bell at the neck—for mules steadily follow an equine leader. What are they carrying? All sorts of things. Pieces of machinery, planks of wood, sheets of corrugated iron, sacks of flour, baskets of fruit, bags of silver or copper ores, or great bales of *coca* leaves; or perhaps vast bundles of "Manchester" goods—a formidable array. Stand fast against the rocky wall and lift up your outside leg to prevent its amputation, and the charging beasts halt and slowly pass you on the outside. The *arriero* behind them salutes you, and the train passes down the precipitous road, and all is quiet again.

In these journeys we are in a continual atmosphere of mules and *arrieros*—a matter not without interest to the observer. There is more science in the proper saddling of a gall-backed horse or the loading of a pack-mule than

you had suspected before you were brought into daily contact therewith. Well versed in mule-lore and management is your *arriero*. Behold him wind his shawl or *poncho* round the head of a mule to readjust its burden—a thing he may have to do a dozen times in a day's journey, for a blindfolded mule does not display his large share of original sin to such an extent as when his eyes are free, and he submits to raw hide ropes being tied under his tail, or wound round his compressed and bulging barrel. Listen to the *arriero's* cheery call, his whistlings, endearments, censure and importunities to the wayward members of his pack-train. With what skill he negotiates a difficult spot, where the unwilling beasts have perhaps to walk up stone stairs leading, apparently, into the sky, or turn sharp corners of precipices where you appear to be going to alight in some town or plantation which shimmers in the haze a few thousand feet below!

In the evening, perhaps, you have arrived at some straggling adobe habitation, and here you must make the best of circumstances, with, possibly, your saddle for a pillow—though the prudent traveller always carries a small camp-bed—and partaking of such scanty provisions as you may be able to purchase from the denizens of the place. But you are always just and open with your *arriero* and native servant—never, of course, too familiar or undignified—and they respect you accordingly, doing everything in their power for your comfort. Some provisions as eggs, chickens, fruit, perhaps, may be purchased, and you have bread, wine or whisky, and coffee and sugar with you. Let us eat, drink, and rest our cramped limbs, and—we talk Spanish, of course—interest ourselves in the conversation of our retainers and the village folk who may have appeared.

Anything pertaining to his four-footed friends is a matter of much interest to your muleteer. He will tell you tales of famous mules which have borne extraordinary loads. A good ordinary load, it may be well to explain, is 300 lbs. A mule-driver on one occasion related—as of a veritable tragedy—the story of a famous mule which he owned,

which brought up from the coast, for an English mining company, a great boiler weighing nearly 600 lbs. The noble beast seemed to be aware of the distinction which had been conferred upon him; there was no other mule in that region which could have been singled out for it. How he staggered on and on, day after day, ascending steep paths and crossing swamps with his load; how he arrived at the mine, and having completed his task, fell dead at the door of the engine-house; and how his body was sepulchred in a special grave, and the memory of his performance handed down among *arrieros* throughout the country—these and other details he recounted, whilst the traveller reclined in his travelling-cot with coffee and cigarettes at hand. And in return for their stories you may draw from memory, and the old Latin fables, wherein animals reasoned and mules conversed. How delighted are the muleteers, for example, with the fable of the two mules who were journeying along heavily laden, one carrying bags of money, the other staggering under great sacks of barley. And how the mule with the money-bags walked proudly along, disdaining its companion who bore such a common load as grain, when robbers rushed forth from the wood and slew the proud mule, and bore off the treasure, leaving uninjured his companion of the barley. Thoroughly well they drew the moral and appreciated how the expiring beast upbraided himself for his pride, and congratulated his companion on his humility—qualities which had brought them such different fates!

A word as to clothing and saddle in these regions for the intending journeyer. Your comfort will greatly depend upon these matters. The best footwear is strong-soled English shooting-boots, and leather leggings and stout knickerbockers to cover your legs. As to clothing, no great preparations are necessary—a white drill coat or duster to cover your ordinary garments when journeying over the hot dusty plains of the coast region, and a thick woollen *poncho*, and a shawl or fur boa to wind round your neck to protect you from the winds and *soroche* of the

¹ “*Muli gravati sarcinis ibant duo,*” etc.

bleak uplands ; as also a good india-rubber cape or *poncho* reaching down to, and covering, your feet when mounted, to keep off the rain and snow and hail, which sometimes appear to converge upon the particular mountain trail you may be traversing !

As to the saddle, it should be a native one, purchased in Lima. These are of the comfortable form suited to hard work, and an English saddle should never be used. There will be a breast-strap to prevent the saddle getting back on to the animal's heels, on the long, steep, upward slopes, and a crupper to provide against a sudden seat on the quadruped's neck in going down-hill. The *cinch* will be broad, about 6 inches of woven cord, which grips the belly of the horse or mule firmly ; the native bridle has a single rein and heavy bit, which seems preferable to other styles. Your saddle-bags, also, are matters of importance, slung behind the saddle-seat and containing some imperishable things of bodily sustenance for unexpected situations. The stirrups are hung on with broad stirrup leathers, which rest the leg ; and the stirrup itself is really a species of thick leather box which protects your feet from rocks and thorns.

And, as to the beasts you bestride, mules are preferable in the Andine regions. They are more active on the rough trails and stone steps of passes, and endure better the occasional lack of fodder or water, and stand the *soroche* of the heights better than horses. If, however, your journey is to be principally upon flat lands, then the horse is preferable. In Peru, as, indeed, in Mexico and other Spanish-American countries, the saddle-animals are trained to a comfortable pace—a kind of swift march—the trot, as customary in Britain, being unknown, except sometimes for military horses. This rapid ambling march gives the minimum of movement and fatigue to both rider and beast, and is kept up all day without a halt. The trotting motion is the most fatiguing and uncomfortable means of advance, and is never likely to be adopted by horsemen in these countries.

A good saddle-mule costs from £20 to £30, and

serviceable horses about the same, or less. All these animals are small of stature in Peru, although wiry, and capable of long endurance. On extended expeditions it is preferable to purchase animals, rather than hire them. Much delay is caused by the difficulty of obtaining mules by hiring in the interior, and, indeed, they are often but sorry brutes when you have got them and your rate of travel will be correspondingly slow. The traveller must supervise the feeding of his beasts at nightfall and early morning, lest his *arrieros*, through laziness or dishonesty, fail to give them fodder and water.

Indeed, your wise traveller in these regions is ever on the alert for difficulties or dangers, and very interesting incidents are sometimes furnished by the frail bridges which cross the mountain streams. Some of these structures are formed by successive "corbelling" out from the banks with logs weighted on the land side, in order to reduce the span for the long beams. Your sagacious mule or horse seems to know instinctively a good deal about these bridges. He enters upon them cautiously; up go his ears: possibly the structure does not meet with his approval. Do not force him, or spur him, or he may indulge in a species of waltz which may deposit you both in the stream below; but dismount and cautiously lead him—a led beast has no fear—and, if you are riding across, and you feel the animal's hoofs slowly sinking through the bed of twigs and earth which form the surface of the structure, alight rapidly!

The Incas built ingenious bridges before the advent of the Spaniards, some of them being long suspension bridges of cables formed of woven grass, or osiers, as elsewhere described. Others were of stone pillars and slabs, spanning the stream. In the region of the Upper Marañon, monoliths of this nature, 15 or 20 feet in length, exist. They are huge "clapper" bridges, such as are found on the tableland of Dartmoor. As for some of the suspension bridges, they crossed deep rivers, and were, in some cases, as much as 200 paces in length.

In journeying from place to place in the Sierra we



PERUVIAN TRAVEL: THE PERENÉ BRIDGE.

shall constantly arrive at villages where there is no accommodation whatever for man and beast, and where, indeed, the advent of a stranger is so rare as to excite the interest and curiosity of the people. In such case we must seek the hospitality of either the *cura*—the village priest—or of the *gobernador*—the petty civil authority of the place. Either of these worthies will generally do all in his power for you, in a spirit of real hospitality. Your beasts are safely enclosed in their *corral* against the depredations of Indian horse-thieves, and your man goes forth armed with a mandate to purchase alfalfa, without which he might not obtain it, for the inhabitants of such places sometimes decline to sell anything.

The priest, or *gobernador*, whichever it may be, takes you into his house and brings forth the inevitable glass of native or foreign brandy—" *Una copita, Señor!*" Of course you take the *copita*. A small glass of spirit after a hard day's ride restores you wonderfully—it would benefit the most hardened teetotaller—and food is at once prepared if it be past the usual hour of *comida*, or dinner.

Bare-footed Indian wenches and lads bring in a well-used tablecloth, plates, and dishes of food, the latter consisting probably of meat boiled with vegetables, or soup made of *chuño*—dried, frozen potatoes. Often there is no bread, but *cancha*, or parched and toasted *maiz*, does duty. Perhaps you insist on supplementing the repast with something from your baggage—as an *obsequio*, or gift, to your host, for he partakes with you of the meal. In any case, you have probably some bread left; you have a bottle of whisky, perhaps some preserved food, and good English tea, some of which you press upon your host. Also, you will offer him—a great luxury in that remote spot—a Manilla cigar or cigarette, such as are smoked in Lima. But none of these matters are necessary. The innate hospitality of the Peruvian will afford you what he has, and ask for no return on that score.

After the meal, others of the few principal inhabitants of the place have probably dropped in, eager to exchange conversation with a dweller of the outside world. They

profess their admiration of your country—especially if you are an Englishman or American—discuss current news of the world as put before them by the papers of Lima—received weekly by the Indian *correo*, or postman—and invite your attention to the mineral wealth of their district, or other matters. You all smoke and take further *copitas*, when they depart, and the bare-legged wench aforesaid makes up your bed, into which you turn without ceremony, and are soon asleep.

Not always, however, shall we meet with such hospitality. The exigencies of our journey may require us to halt at some small Indian village, without *cura*, *gobernador*, or other enlightened individual whatsoever. Sullen looks and churlish responses will be the reply to our demands for food, fodder, and habitation. For the *Cholos* of the Sierra, as has been explained elsewhere, are possessed by the greatest distrust towards strangers—a result of the treatment that has been meted out to them by Spaniards and Peruvians, and especially by military contingents who may have passed that way, either during times of war or peace. Sometimes when the traveller approaches such places with his men and pack-mules, the inhabitants—especially the women and girls—hurriedly retire to their dwellings, and nothing can be purchased whatever from them at first, either for fair words or money. These places embody what may be termed the “*no hay*” region; which means in English, “There is none,” the sole reply to every enquiry for articles of fodder or provisions. Often the reply is not even made in Spanish, but in Quechua, as “*Manam Cancho*.”

At first glance in these places it seems that we are doomed to spend the night by the wayside, ourselves without food, save what possibly our exhausted saddle-bags may afford, and our beasts—and this is the more serious—without fodder. But as a general rule some diplomacy and kindness will open the hearts of the inhabitants, and by proffering money in advance, food may be purchased; more, however, from good-will than for business ends, for in some places money has absolutely no purchasing power.

The traveller will always endeavour to leave these poor and backward people with a better impression of foreigners than they have, rightly or wrongly, held. A small present, kind words, and justice in dealing with them will cause them to remember that, at least, an *Inglés* is a person to be trusted.

But let us not draw too sombre a picture of these high regions. Glorious landscapes unfold as we ride: far horizons stretch before us, where peak, summit, valley, plain, and canyon blend into the soft haze of distance; where rushing streams descend from gleaming, glacier-bound slopes. The exhilaration of the tonic air fills our being; our hard couch and frugal fare are forgotten; forward lies our destination. Tree-filled valleys below retain the gloom of vanishing night, or anticipate that of parting day; strange mist-effects of nature's transformation scenes are displayed there for us, and glorious cumulus cloud-masses rise beyond, or blend with, the violet snow-cornices of the eternal ice-capped Cordillera which bounds our vision on either hand. Bands of vicuña stare and race as we approach; white gull-like mountain birds flee with their piercing cry before us; thousands of native squirrels—the *viscachas*—play upon the rock-ramparts in the foreground; fat partridges hurry up grassy slopes, and on the blue lakes, amongst which we thread our way, great water-fowl disport themselves, rippling the calm images cast on those blue mirror-surfaces of peaks, and sky, and clouds, and landscape.

And evening falls: the sun-god of the Incas sinks in the Occident. Nature's mighty picture takes on the tints which anticipate repose—her rest and ours. A chill wind sweeps warningly over the endless steppes; the porcelain peaks grow ruby red—a moment—and then the carmine sky and pearly zenith take on the purples of the falling night. It is time that we, our *arriero*, and our beasts, were all reposing in our *tambo*, or whatever habitation circumstance may have afforded us.

CHAPTER XXIII

CONCLUSION

IN the foregoing chapters we have followed, step by step, the conditions and events which have marked the evolution of the Republic of Peru. The misty beginnings of its peoples before the dawn of the history of America come to us from the pages of early writers and the students of Peruvian archæology; and the chequered events of the times, following upon the European advent—generally strenuous and bloody—have led us on to see the development of a measure of prosperity, and the modern life of the republic. The scarred pages of the country's history seem to conform with the rugged chaos of its topography; and the marchings of armies across those bleak Andine uplands, whether carrying the banner of oppression or of liberty, crowd its annals, and tinge our study of its geography. From the savagery of man we have turned to the wealth of nature: bloodshed and gold have blended in our retrospect. From eternal snows to placid ocean we have sought to survey the country, and whether with the humble *arriero* and his pack-mule upon difficult mountain trails, or with easier means of conveyance, we have surmounted the crests of the Cordillera, and have shirked no point or matter of interest or examination.

The history of Peru, as indeed the history of any state in the New World, shows how hard it is for man to shake off his primitive vices and begin anew. It might have been supposed that a step forward in social life could have been secured to mankind in the new communities of the Americas, but events show this to be doubtful. Whether in the Anglo-Saxon republic of North America, or the

Hispanic States of South America, there is little yet that can be pointed to as a forward stage for the world, and the truth is impressed upon us that America and Europe must advance conjointly.

As regards Peru, too much must not be expected of her, for her time of independence covers less than a century. Whether the civilisation of the Incas, which was cut short by the Spanish advent, would have developed under different circumstances into something useful for the world it is idle to ask. As to the Spanish rule, history shows that it was cruel and exhausting—a drain of resources and the oppression of the inhabitants. There has arisen recently among historians a spirit of defence for Spain, and the civilisation she implanted over the vast American region, and none will dispute the magnitude and strength of this sway. But no observer who has dwelt in such countries as Peru and Mexico, which were the chief centres of Spain's dominion in America, and who has learned their history on the spot, can fall in with any apology for the series of barbarous acts committed in these countries by official, ecclesiastical, or civilian Spain.

But Spain left much that is good in the character and institutions of the people of Spanish America. Many of their defects are such as may become virtues. The cry for "liberty," which has too often been fantastic, has at bottom an elevating principle. It has ever been customary to denounce the hispanic traits of love of ease and pleasure, and disinclination for hard, commercial work ; but it may be that nature intends the Spanish-American some day to show the world that life is not meant for the sheer and strenuous commercialism towards which Anglo-Saxon civilisation is tending to err. With all their faults of administration, the Spanish-American States do not show defects graver than those of the commercial dishonesty recently exhibited by North Americans, which has tinged our admiration for their great country with regret.

But the Spanish-American has one grave fault, or at least he is often accused of it—that of too easily disregarding his pledged word, and of escaping from his obligations

when pressed ; and nothing can excuse this. But this evil quality is not confined to any nation or race alone.

The future of Peru depends principally upon the opening up of her natural resources, and the augmentation of her population. This, however, does not mean that her fields and mines must be drained of their wealth by greedy foreign capital, which will leave nothing permanent behind it, or that her national character must be swamped by outside influence. Nor would it be a pleasing picture to see her quaint cities, and literary and refined traditions, swept away by the establishing of a blatant manufacturing element. As to immigration, the opportunity of such countries as Peru is approaching, for North America and other population-absorbing communities are being closed ; whilst the rich continent of South America is still fallow. The Peruvian task, then, is to invite and absorb these outside elements without losing her own identity, and there is no doubt that the strong Spanish character will accomplish this.

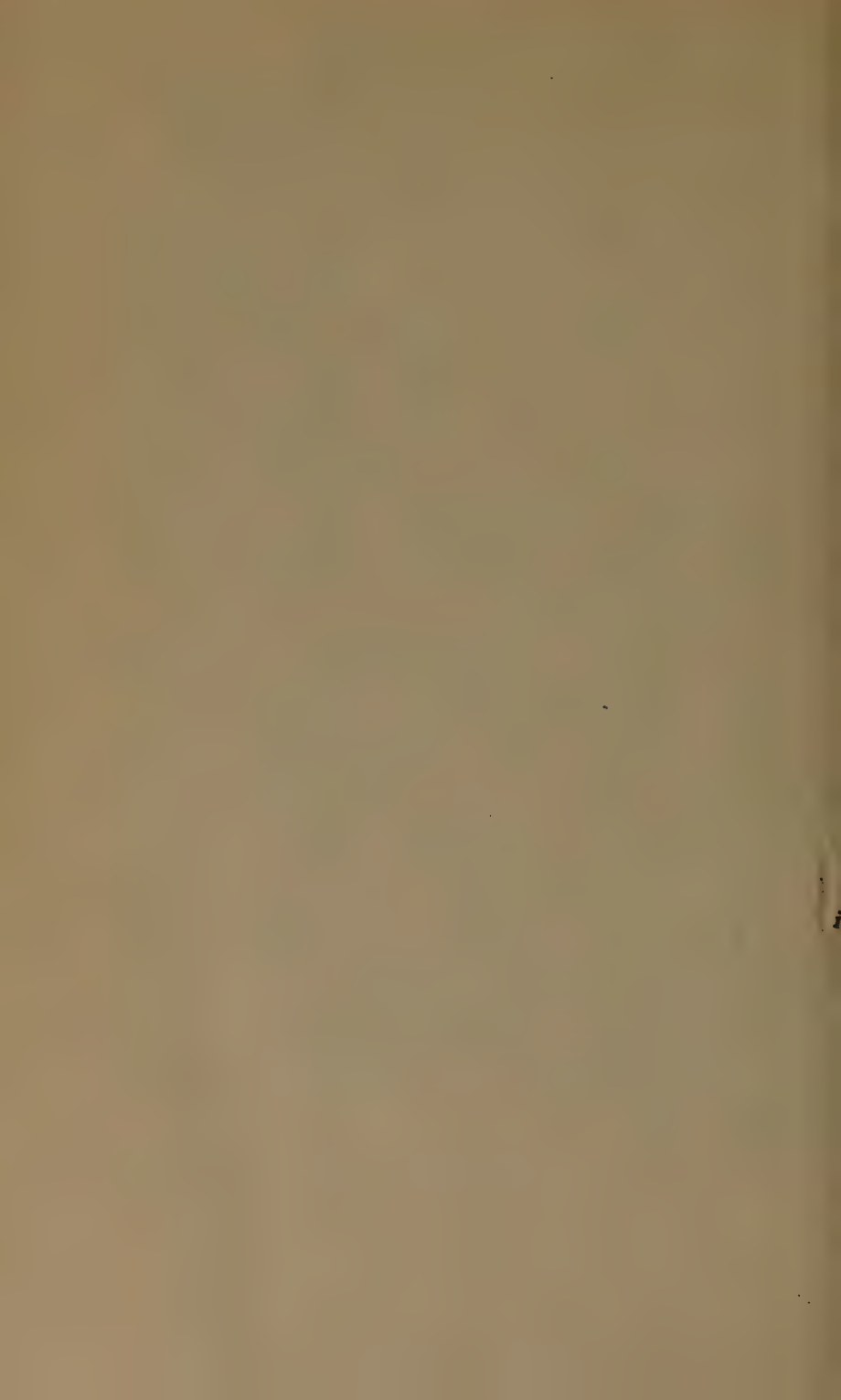
At home there is hope that the flame of turbulence and revolutionary habit has run its course and is done with. Abroad, the country's relations with her neighbours—as indeed is the case throughout South America generally—tend more and more to peaceful settlements of outside questions, especially those of boundaries. The great factor in Peruvian policy and history of the last half-century has been Chile. Relations with this neighbour have been as a dark shadow upon her life, but she can afford to hold herself with serenity, and continue on her way with growing prestige. It remains to be seen how Chilean influence on the Pacific Coast will be affected in the future, in view of the growing influence of the United States there—which will be augmented by the completion of the Panama Canal—and the rising prosperity of Peru, whose natural resources and geographical position are in some respects more important than those of Chile. The future of these two countries—Peru and Chile—lies together and should not be antagonistic ; and a wise Chilean policy would now see that, in her own interests, a time for consolidation of mutual relationship has arrived.

As to foreign influence, it is almost pathetic at times to observe with what eager interest the Peruvians look eastward and northward to the civilisation of Europe and North America for approbation, instruction, or aid in the advancement of their own life. Much is thought of foreign opinion, and vivid interest displayed in foreign happenings by this eager and developing people. North American political interest or influence is a growing factor, and there has been a tendency to look to the United States as the great element in international affairs, and the example to be copied by Peru. But this has recently been tempered by a more judicious and broader grasp of foreign relations and the knowledge that Europe is the main centre whence civilising streams flow to South America. The United States is, however, justly recognised as the great policeman in the American hemisphere, although in South America generally, the Monroe Doctrine is a debated theme.

Civilisation and thought in Peru are somewhat isolated, due to geographical conditions. North and south are communities in similar conditions, which can teach her nothing; whilst to the east the great barriers of the Andes, and the unsettled forests of the Amazon, prevent at present any intermingling or unity with the peoples of the Atlantic Coast. It is exceedingly doubtful if any confederation of the various states of South America can yet be expected to be brought about. These communities all consist of small nuclei of civilised elements, surrounded by great areas of savage territory, and each must occupy its energy in developing these before contact can be made.

Peru, for her part, is working hard to the end of using and bettering her territory and conditions. Both in her soil and her people she contains elements of greatness, and it may be said that she is worthily striving to carry forward the principles of civilisation in that part of the great South American continent which nature has assigned to her control.

THE END



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